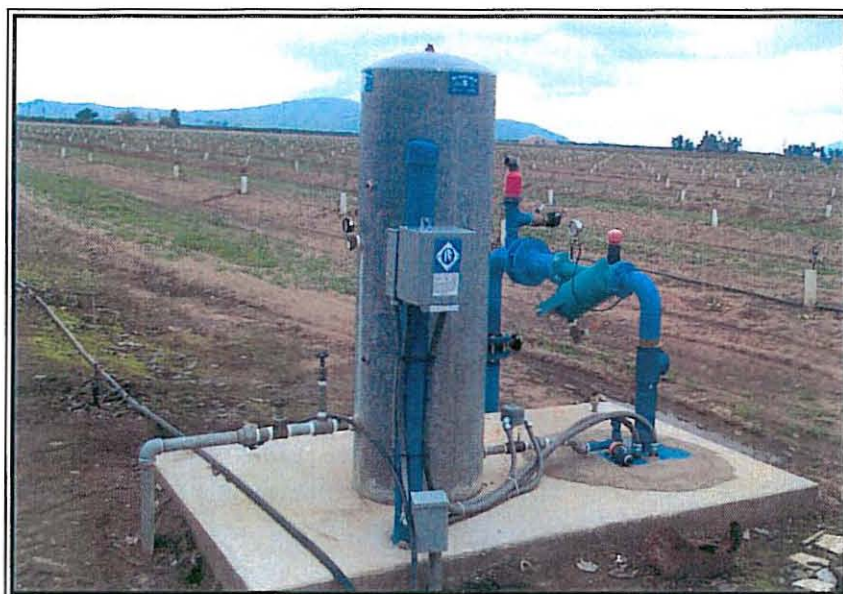


**ORANGE COVE IRRIGATION DISTRICT
GROUNDWATER MONITORING
AND DROUGHT PREPAREDNESS PROGRAM**

**APPENDIX B
GROUNDWATER MANAGEMENT PLAN**

GROUNDWATER MANAGEMENT PLAN

FOR
ORANGE COVE IRRIGATION DISTRICT
TRI-VALLEY WATER DISTRICT
HILLS VALLEY IRRIGATION DISTRICT



Prepared by:

Provost & Pritchard Engineering Group, Inc.
Fresno, CA



Adopted
June 14, 2006

Groundwater Management Plan
Orange Cove Irrigation District
Tri-Valley Water District
Hills Valley Irrigation District

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List of Abbreviations

AB	Assembly Bill
CVP	Central Valley Project
DWR	Department of Water Resources
GMP	Groundwater Management Plan
GPM	Gallons per minute
HVID	Hills Valley Irrigation District
OCID	Orange Cove Irrigation District
PMZ	Pest Management Zones
SB	Senate Bill
TVWD	Tri-Valley Water District
USBR	United States Bureau of Reclamation
WSD	Water Storage District

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EXECUTIVE SUMMARY

The Orange Cove Groundwater Management Plan is a cooperative effort between the Orange Cove Irrigation District (OCID), Hills Valley Irrigation District (HVID), and Tri-Valley Water District (TVWD). These districts are located near the City of Orange Cove in both Fresno and Tulare Counties (Exhibit ES-1). The area covered by the three Districts is called the 'Plan Area' and the three Districts are called the 'Plan Group'. Recently, the three districts have discussed consolidation into a single district to improve coordination and reduce overhead costs.

This Groundwater Management Plan (GMP or Plan) is a revision of a Plan that was adopted by the Plan Group in 1997. The Plan was revised to satisfy the new requirements for GMPs created by the California State Senate Bill No. 1938 (September 2002) that amended sections 10753 and 10795 of the California Water Code.

Goals and Objectives of Groundwater Management Plan

The objective of this GMP is to present alternatives and guidelines for meeting the following goals:

- Optimize the volume of usable groundwater underlying the Plan Area;
- Protect the groundwater quality;
- Coordinate the groundwater management efforts between the Plan Group districts;
- Implement a groundwater-monitoring program to provide an "early warning" system to future problems; and
- Stabilize groundwater levels in order to minimize pumping costs and energy use.

Water Supplies

The Plan Group members are all Central Valley Project (CVP) water contractors and contract for water directly or indirectly from the Friant Unit of the CVP. These surface water supplies are not sufficient to meet full irrigation requirements, and therefore, landowners must pump groundwater or find other surface supplies to meet crop demands. For the most part, groundwater wells within the Plan Area produce significantly less than 100 gallons per minute (gpm). Although groundwater is pumped throughout the entire Plan Area, only the aquifer in the southern portion of OCID, as depicted on Exhibit ES-1, yields a significant groundwater supply. The Plan Area also faces significant water management challenges as a result of inadequate surface water storage in Millerton Reservoir, inadequate groundwater storage due to the unfavorable characteristics of the local aquifer, and a lack of long-term groundwater banking agreements that could provide a reliable dry-year water supply.

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Geology and Hydrogeology

In the early 1900's the groundwater level declined rapidly in the Plan Area as irrigated agriculture became prevalent. After OCID obtained a CVP surface water contract in the late 1940's the groundwater level began to rise and is now fairly stable. In the area with a sustainable groundwater supply, depth to groundwater ranged from about 10 feet to 60 feet in 2002.

The presence of shallow granite bedrock beneath the surface of the Plan Area allows for little storage capacity in the shallow alluvium above. The upper few feet of the granite layer are the most decomposed and offer the largest storage capacity. This is also the most defined aquifer in the Plan Area, but still provides only limited groundwater storage potential.

Basin Management Objectives

The Plan Group's basin management objectives cover the following broad areas: 1) stakeholder involvement, 2) groundwater monitoring, 3) groundwater resources protection, 4) groundwater sustainability, and 5) groundwater planning and management. Guidelines and goals for each of these basin management objectives were established and documented in the GMP.

1 - Stakeholder Involvement

The Plan Group is located in the Kings Groundwater Basin, which includes other municipalities, irrigation districts, water districts, private water companies, and private users. This emphasizes the importance of inter-agency cooperation. The Plan Group has historically worked to optimize its surface water supplies due to the limited basin water within its boundaries. However, due to the ever increasing demand for water in the State, the Group recognizes the importance of including groundwater in its planning activities where it can potentially enhance dry-year supplies. The Plan Group will work with the following agencies to manage the local groundwater: County of Fresno, County of Tulare, City of Orange Cove, Alta Irrigation District, Friant Water Users Authority, Kings River Conservation District, Department of Water Resources (DWR), and United States Bureau of Reclamation (USBR). The Plan Group will continue to participate in the following inter-agency efforts:

- Meetings and cooperative efforts involving the joint authors of this Plan;
- Sharing of groundwater level data with the Alta Irrigation District;
- Submission of groundwater level data to the DWR, USBR and Fresno County; and
- Encourage the City of Orange Cove to resume tertiary treatment at their water treatment plant.

An important instrument in these efforts is the recently formed Groundwater Advisory Committee (Committee). The Committee was formed to update, plan, monitor, and evaluate the technical progress made in achieving the goals of this Plan. The

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Committee will attempt to meet annually, or more frequent if deemed appropriate, and will have the following responsibilities:

- Review trends in groundwater levels and quality;
- Evaluate the effectiveness of groundwater policies and groundwater facilities;
- Recommend updates or amendments to the GMP;
- Provide coordination among the Plan Group (OCID, TVWD and HVWD);
- Monitor and evaluate the implementation of the proposed OCID drought preparedness program;
- Educate landowners on the importance of various groundwater management activities; and
- Submit an annual memorandum to the Plan Group including comments, ideas and recommendations.

2 - Groundwater Monitoring

The Plan Group's groundwater monitoring program includes two main elements: groundwater-level monitoring and groundwater-quality monitoring. The monitoring program is intended to: 1) provide warning of potential future problems; 2) gather data for water resources evaluations; 3) develop meaningful long-term trends in groundwater characteristics; 4) provide data comparable from place to place in the Plan Area; and 5) better characterize the quality of groundwater in the Plan Area.

Land surface subsidence, saline water intrusion, migration of contaminated groundwater, and surface water quality impacts on groundwater are not currently problems in the Plan Area. Nevertheless, the Plan Group will monitor the groundwater in a manner that provides management information about these issues. If any of these issues become problematic then appropriate monitoring and mitigation efforts will be investigated.

Groundwater Level Monitoring. OCID currently measures water levels each spring and fall in about 30 wells. The OCID monitoring network is being significantly expanded to include a larger number of wells, consistent monitoring protocols, a Geographic Information System, and an updated database to store groundwater data and assist with preparing annual groundwater reports. The new monitoring network is expected to be completed by early 2006.

Groundwater Quality Monitoring. The Plan Area has not historically had groundwater quality problems, and, consequently, the Plan Group has only performed water quality testing on a sporadic and limited basis. Nevertheless, the Plan Group has a tentative goal to develop a groundwater-quality monitoring-program that would detect problems in time to remedy them. The program would primarily entail collecting and reviewing data collected by other agencies. For municipal purposes, some groundwater in the area of

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the Orange Cove exceeds the permissible level of nitrates for drinking water, but is still suitable for agriculture. The Plan Group will continue to collect and review water quality data from the City of Orange Cove's monitoring program, and periodically assess the adequacy of the monitoring program.

3 - Groundwater Resources Protection

Fresno County has adopted a permitting program to assure proper construction, abandonment, and destruction of groundwater wells within Fresno County. The permitting program is consistent with guidelines in DWR Bulletin 74-81. The Plan Group supports and adheres to these standards. In addition, the Plan Group will encourage landowners to follow the same standards for privately owned wells.

4 - Groundwater Sustainability

Overdraft Mitigation. Groundwater overdraft is not presently a problem in the Plan Area. However, the rehabilitation of the OCID distribution system in the 1990's reduced system leakage, and groundwater replenishment, by about 2,600 acre-feet/year. The impact of the rehabilitation on groundwater overdraft will continue to be monitored.

In addition, OCID is currently studying the possibility of establishing in-lieu use agreements with growers. In-lieu use agreements would provide incentives for growers with reliable wells to use more surface water in wet years and shift to groundwater pumping in dry years. The release of those grower's surface water supplies in dry years would increase dry year surface water supplies for other growers in the Plan Area. If implemented, this program will be closely monitored to prevent groundwater overdraft or high water tables.

Groundwater Replenishment. The Plan Group does not practice intentional groundwater replenishment because of the fairly high and stable groundwater levels, and the existence of some natural and indirect forms of groundwater replenishment (deep percolation from irrigation, streambed infiltration, canal seepage, etc.). If overdraft becomes a problem then other methods of groundwater replenishment will be investigated.

Conjunctive Use of Water Resources. Conjunctive use of water is defined as the coordinated use of both surface and subsurface water so that the combination will result in synergistic benefits. When practical and appropriate, the policies below will be followed to encourage and facilitate conjunctive use:

- Encourage and assist water users with "in lieu" recharge;
- Pursue the acquisition of new surface water supplies;

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- Generally discourage transfers of surface water out of the Plan Area that are replaced with groundwater pumping, except for District approved water sales or other transfers that are approved by the Board of Directors;
- Encourage urban water agencies to fully utilize surface supplies and minimize groundwater pumping;
- Work with all appropriate parties to protect existing surface water rights and supplies; and
- Seek opportunities to increase conservation storage through groundwater banking programs or off-stream storage.

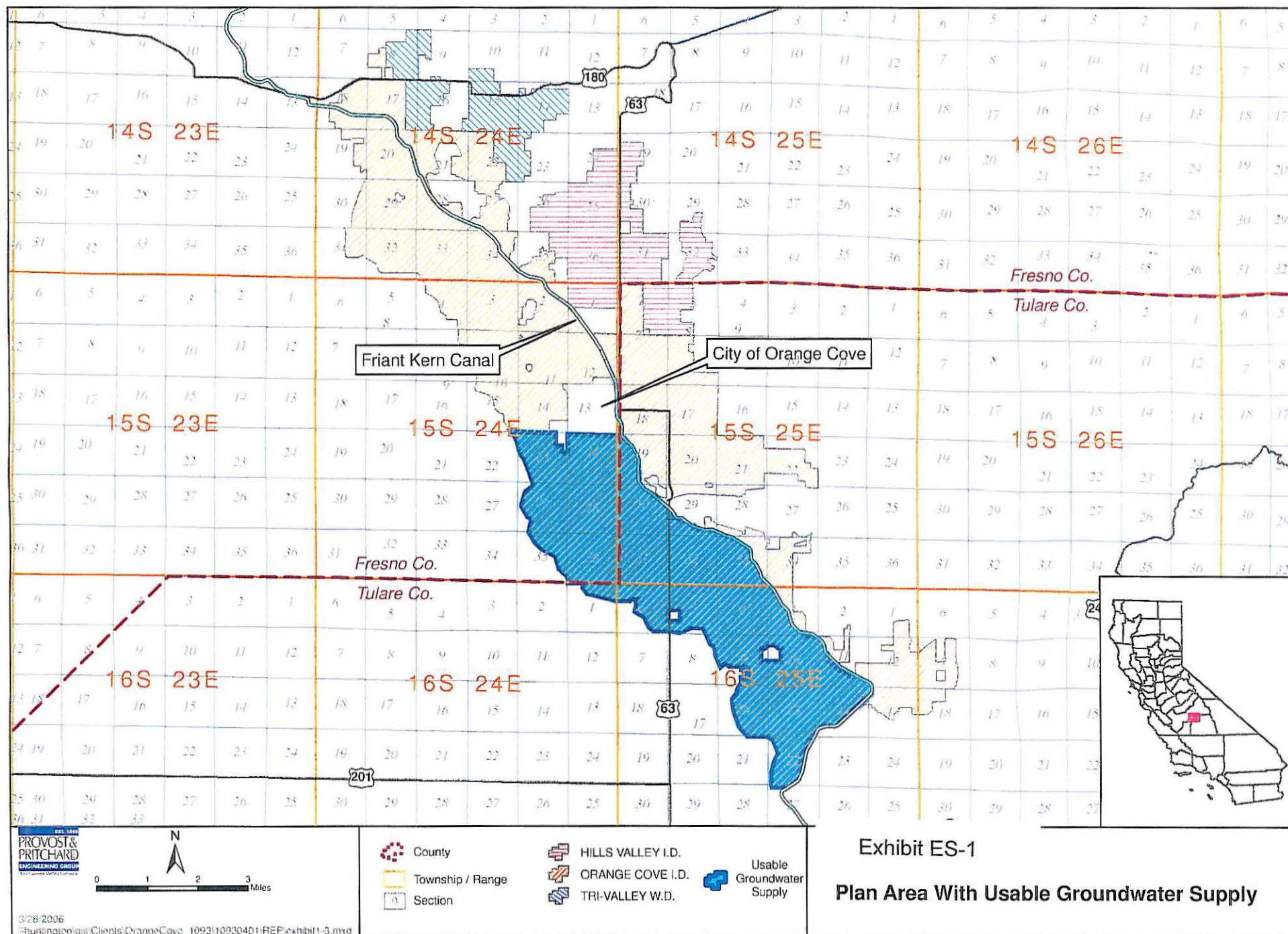
5 - Groundwater Planning and Management

Land Use Planning. The Plan Group does not have direct land-use planning authority. However, they do have the opportunity to comment on the environmental documents for land-use related activities, and will pursue actions to minimize any adverse impact on groundwater supplies, groundwater quality, groundwater levels, groundwater recharge areas, and surface water supplies as a result of any proposed land use changes.

Groundwater Reports. The Plan Group has a goal to prepare annual groundwater reports. The reports will include groundwater level data, groundwater storage calculations, an evaluation of historical trends, a summary and evaluation of important groundwater management actions, and a summary of future goals.

Plan Implementation. Implementing the GMP is in the best interest of the Plan Group's growers. In addition, future funding for groundwater projects may be based largely on the Plan Group's pro-active role in implementing the GMP. The current implementation schedule for the GMP is as follows:

1. Implement a new expanded groundwater-level monitoring program. (2006)
2. Develop an incentive based in-lieu use program that would encourage groundwater pumping in dry years to provide more surface water to growers with no groundwater supply. (2006-2007)
3. Prepare annual groundwater reports. (beginning in 2006)
4. Hold annual Groundwater Advisory Committee meetings. (beginning in 2006)
5. Renew discussions with the City of Orange Cove regarding the use of treated water for irrigation. (2006-2007)
6. Seek opportunities to form or join regional water management groups. (2006-2007)
7. Incorporate water level data from areas just outside of OCID into the OCID groundwater database. (2006)



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1 - INTRODUCTION

This Groundwater Management Plan (GMP or Plan) is a revision of a Plan that was adopted by the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Water District on October 27, 1997. The original Plan was prepared in accordance with the requirements prescribed in Assembly Bill No. 3030 (California Water Code Section 10750 et seq.). The Plan was revised to satisfy the new requirements for Groundwater Management Plans created by the September 2002 California State Senate Bill No. 1938, which amended Sections 10753 and 10795 of the California Water Code. The Plan also addresses recommended components for a Groundwater Management Plan described in Appendix C of Department of Water Resources Bulletin 118 (2003 Update).

1.1 - General

The Orange Cove Groundwater Management Plan is a joint venture between Orange Cove Irrigation District (OCID), Hills Valley Irrigation District (HVID), and Tri-Valley Water District (TVWD). These districts are located near the City of Orange Cove and are adjacent to the foothills of the Sierra Nevada Mountains. OCID's and HVID's service areas exist in both Fresno and Tulare Counties. TVWD's service area exists solely in Fresno County. Refer to **Exhibit 1-1** for a location map of the three agencies. From hereon, the area covered by the three Districts will be called the 'Plan Area' and the three Districts will be collectively called the 'Plan Group'.

The Plan Area is located about 30 miles southeast of the City of Fresno and 20 miles north of the City of Visalia and is comprised of 34,715 acres (OCID, 28,000 acres; HVID, 4,340 acres; TVWD 2,375 acres). The area is generally described as the irrigable land lying east of the Alta Canal between Campbell Mountain in the north and Stokes Mountain in the south.

The Plan Area is on the fringe of the Kings Groundwater Basin within the larger San Joaquin Basin Hydrologic Study Area. Refer to **Exhibit 1-2** for a groundwater basin map showing the Kings Groundwater Basin and surrounding groundwater basins.

The Plan Group members are all Central Valley Project (CVP) water contractors with OCID contracting for water directly from the Friant Unit of the CVP. The surface water supplies are generally considered supplemental supplies, as they are not sufficient to meet the full irrigation (consumptive use) requirements for the crops grown in the area. Therefore, landowners have to pump groundwater or find other surface supplies to produce a crop.

For the most part, groundwater wells within the Plan Area produce significantly less than 100 gallons per minute (gpm). Within the Plan Area, only the southern portion of OCID, as depicted on **Exhibit 1-3**, yields a significant groundwater supply. This area is

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located between the Friant-Kern Canal and Alta Canal and extends from South Avenue to the southern tip of OCID. The Navelencia area, located in the northern portion of OCID between the Friant-Kern Canal and Campbell Mountain, yields some groundwater, but the total yield is relatively minor.

Due to the critical balance of the water supply in the Plan Area, the Plan Group has chosen to work together to evaluate opportunities to optimize the management of groundwater resources conjunctively with all of the available surface supplies.

1.2 - Regional Climate

The Plan Area is characterized as having hot and very dry summers, with relatively mild winters. The mild winter temperatures have made this an excellent location for growing citrus. The formation of a high fog during most winter months helps prevent temperatures from dropping below freezing. Cold, clear nights can still result in freezing temperatures, requiring frost protection measures by the growers.

The average annual precipitation in the area is approximately 13 inches with the majority of the rain falling during the winter and early spring months. The summers and early fall are predominately hot and dry. It is not uncommon to have a four or five month period without any significant rainfall during the late spring through early fall period.

1.3 - Background Information on Orange Cove Irrigation District

The Orange Cove Irrigation District (OCID) is a political subdivision of the State of California, formed for the purpose of delivering water to growers within the OCID. OCID was organized in February, 1937, and at the time comprised an area of 12,587 acres. The Navelencia and East Orosi areas were annexed in March of 1946, and, with minor inclusions and exclusions, has increased the service area to the present total of approximately 28,000 acres.

OCID is located in both Fresno and Tulare Counties at the eastern edge of the San Joaquin Valley. Refer to **Exhibit 1-4** for a map illustrating the District borders and major facilities. Refer to **Exhibit 1-5** for a map showing the general location of wells that are used in the District's groundwater level monitoring program.

The water needs of OCID are approximately 76,000 acre-feet of water annually.¹ In a year with full CVP contract entitlement, OCID has 39,200 acre-feet of surface water. The safe yield of the groundwater underlying the surface area is 27,800 acre-feet², which is about 9,000 acre-feet short of the total crop needs. In average and wet years, the shortage is made up from rainfall. In water short years, the only way to make up the

¹ Water Needs Analysis, Friant Unit Contractors, March 7, 1988.

² USBR, Geologic Study of the Orange Cove Irrigation District, August, 1947.

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shortfall is from water purchases on the open market and overdrafting the groundwater supply.

OCID was formed to import surface water into the area to offset a potentially extensive reduction in cropping caused by over pumping of a very limited groundwater supply. In the mid-1930's, an extensive effort was made to secure a 250 cfs diversion entitlement from the Kings River. This effort was abandoned when an opportunity arose to contract for CVP water.

OCID entered into a contract for CVP (Friant Division) water on May 20, 1949, and started deliveries that same year, starting the term of its first 40-year contract. A renewal contract was entered into on May 23, 1989, again for a 40-year term, but has encountered extensive legal challenges based on whether the Bureau of Reclamation had adequately complied with federal environmental law. Following a series of interim renewal contracts, OCID executed a long-term renewal contract in February, 2001.

The Friant-Kern Canal is the main source of water, with OCID having 15 turnouts located between Milepost 35.87 and Milepost 53.32 along the Canal. The service area comprises a strip of land approximately 3 miles wide and 14 miles long along the western foothills of the Sierra Nevada Mountains.

1.4 - Background Information on Hills Valley Irrigation District

The Hills Valley Irrigation District (HVID) was initially formed in 1948 and since that time the land use has transformed from grazing land to a highly developed irrigated agricultural area comprised of permanent plantings that are primarily devoted to citrus. HVID currently covers 4,340 acres.

The HVID started receiving federal water in October of 1969, when it entered into a short-term water service contract with the U.S. Bureau of Reclamation. The contract made federal water available to HVID only in those years in which surplus Project water existed in Millerton Reservoir to the benefit of the Friant Division of the CVP.

In May of 1976, the District entered into a long-term water service contract with the U.S. Bureau of Reclamation. The contract is for federal water through the Central Valley Project and forms the basis for an exchange agreement with the Arvin-Edison Water Storage District (Arvin-Edison WSD). This agreement provides for an exchange of contract water between the two districts using the Friant-Kern and the Cross Valley Canals. Arvin-Edison WSD takes delivery of HVID water from the Cross Valley Canal and allows the HVID to take delivery of Arvin-Edison WSD water from the Friant-Kern Canal.

The initial contract provided for a maximum of 2,146 acre-feet to be transported annually through the State Water Project facilities (San Luis Unit/California Aqueduct) to

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the Cross Valley Canal. An amendatory contract was negotiated with the Bureau of Reclamation (USBR) to increase the water supply allotment to 3,346 acre-feet annually, an increase of 1,200 acre-feet. This contract was executed in October of 1987.

In June of 1993, HVID entered into a subcontract for Cross Valley Canal water with the County of Tulare. The contract transferred canal ownership and contract rights to an additional 2,913 acre-feet of surface water supply.

Surface water is delivered to lands within two improvement districts and part of the District is not within any improvement district. The majority of the holdings are of 120 acres or less and there are 24 different landowners within the HVID. There are approximately fourteen residential dwellings within the HVID boundaries. These residences rely on groundwater for domestic supply.

1.5 - Background Information on Tri-Valley Water District

The Tri-Valley Water District (TVWD) is comprised of 2,375 acres within Fresno County. The TVWD was initially formed in 1964 for the express purpose of obtaining a surface water supply for the land within its boundaries. A wide variety of permanent crops are currently being grown, with citrus being the most prevalent. In addition, there is also a substantial amount of pasture and open land within the TVWD. The total area of TVWD is 2,375 acres. The average size landholding within TVWD is 140 acres and the range in parcel size is from 10 acres to 606 acres.

Surface water is made available through the Cross Valley Canal exchange program. The rights for the water are assigned to the 11 landowners that participate in the exchange program. Their combined holdings total about 1,590 acres. The remaining lands within the TVWD are not entitled to surface water since the owners opted to not participate in the exchange program. Of the 1,590 acres, the operators have used surface water on 767 acres to date.

1.6 - Goals and Objectives of Groundwater Management Plan

It is the intent of this Plan to develop and present alternatives available to the Plan Group to meet the following goals for preserving and enhancing the existing groundwater basin underlying the Plan Area:

- Optimize the volume of usable groundwater underlying the Plan Area.
- Preclude water exports that may degrade the long-term usable volume of water underlying the Plan Area.
- Protect the quality of groundwater underlying the Plan Area.
- Protect the reliability of unrestricted, non-export, private use of the groundwater underlying the Plan Area.

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- Coordinate groundwater management efforts between the participating districts.
- Maintain local management of the groundwater resource underlying the Plan Area.
- Implement a groundwater-monitoring program to evaluate groundwater management efforts affecting the Plan Area and to provide an "early warning" system to future problems associated with the groundwater resource.
- Stabilize groundwater levels at the highest practical beneficial level in order to minimize pumping costs and energy use.
- Maximize the use of surface water, including available flood water, for beneficial use.

In addition, the Plan Group will take a proactive role in the legislative process. They will participate in development of sound legislation concerning groundwater management if it becomes necessary. They will also take an active role in opposing any legislation that is detrimental to local groundwater management efforts.

1.7 - Statutory Authority for Groundwater Management

The GMP adopted by the Plan Group in 1997 was done so according to statutory language in Assembly Bill No. 3030 (AB 3030). The Plan has been updated to include components listed in California Senate Bill No. 1938 (SB 1938). AB 3030, as chaptered, (California Water Code, Division 6, Part 2.75, SEC. 10750-10753.9) grants specified "local agencies" authority to undertake groundwater management. The participants in this joint venture are such local agencies and are empowered to manage groundwater under the provisions of AB 3030. AB 3030 also confers upon local agencies the powers of a water replenishment district. These authorities remained unchanged with the amendments to the law provided by SB 1938. In addition, agencies adopting a Plan are authorized to enter into agreements with other local agencies or private parties to manage mutual groundwater supplies, including those existing in overlapping areas, as necessary to implement the Program.

1.8 - Adoption of Plan

Refer to **Appendix A** for documentation on the adoption of the GMP and the public process that was followed.

City of Orange Cove

OCID solicited comments from the City of Orange Cove on the draft GMP. OCID would like to improve cooperative groundwater management with the City of Orange Cove since they share the same groundwater aquifer.

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Groundwater Advisory Committee

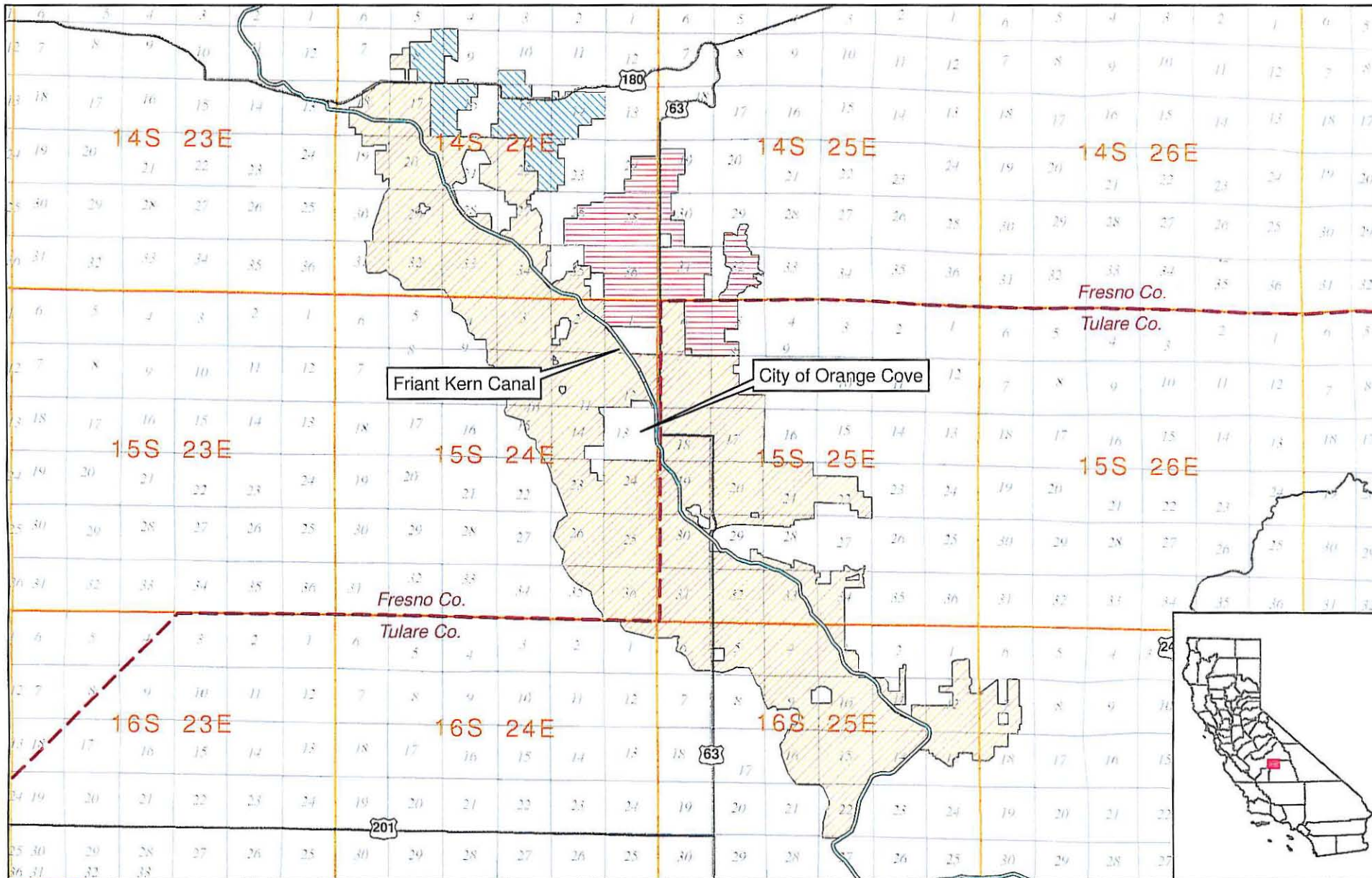
The Groundwater Advisory Committee (GAC) was directly involved in the development of the GMP. All GAC members were given the Executive Summary for the GMP as well as the opportunity to comment on the entire document. At a GAC meeting on September 27, 2005, the new components required for GMPs were presented and explained to the GAC. At a meeting on December 6, 2005, the GAC members were presented with the proposed implementation plan for the GMP and given an opportunity to provide comments and add items.




Intention to Update Groundwater Management Plan

On November 24, 2004 and December 1, 2004, the Plan Group published notices of a hearing on the Resolution of Intention to Update the Plan Group's Groundwater Management Plan in the Reedley Exponent. As required, the notices included information on how members of the public may participate in the preparation of the Groundwater Management Plan. On December 8th, 2005 a noticed public hearing was conducted at the Orange Cove Irrigation District's office, and representatives from OCID, HVID and TVID agreed to update the Plan Group's Groundwater Management Plan, pursuant to Senate Bill No. 1938. No comments were provided by any public participants on the intention to update the Plan. The Plan Group adopted a resolution (No. 2005-14) to update the GMP. Copies of the resolution were published in the Reedley Exponent on December 29, 2005 and January 5, 2006.

Adoption of Groundwater Management Plan

On June 1 and June 8, 2006, the Plan Group published notices in the Reedley Exponent on a hearing to adopt the updated Groundwater Management Plan. On June 14, 2006 a noticed public hearing was conducted at the Orange Cove Irrigation District's office, and the Board of Directors of OCID, and representatives from HVID and TVWD adopted a resolution (No. 2006-04) to adopt the updated Groundwater Management Plan, pursuant to Senate Bill No. 1938. No comments were provided by any public participants on the resolution to adopt the updated Plan. Copies of the resolution were published in the Reedley Exponent on _____ and _____.



3/28/2006
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County	HILLS VALLEY I.D.
Township / Range	ORANGE COVE I.D.
Section	TRI-VALLEY W.D.

Exhibit 1-1

Location Map For: Hills Valley Irrigation District
 Orange Cove Irrigation District
 Tri-Valley Water District

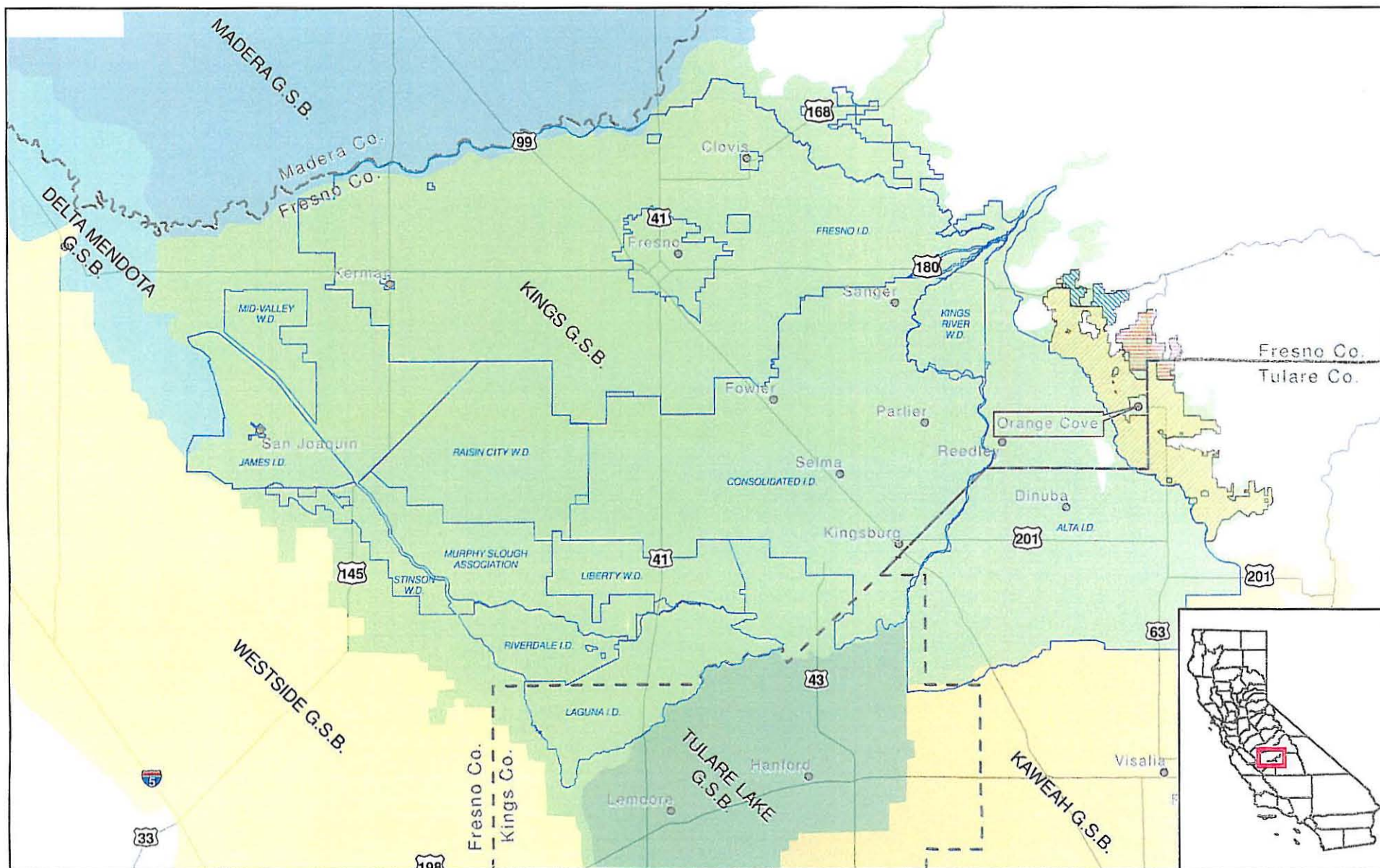
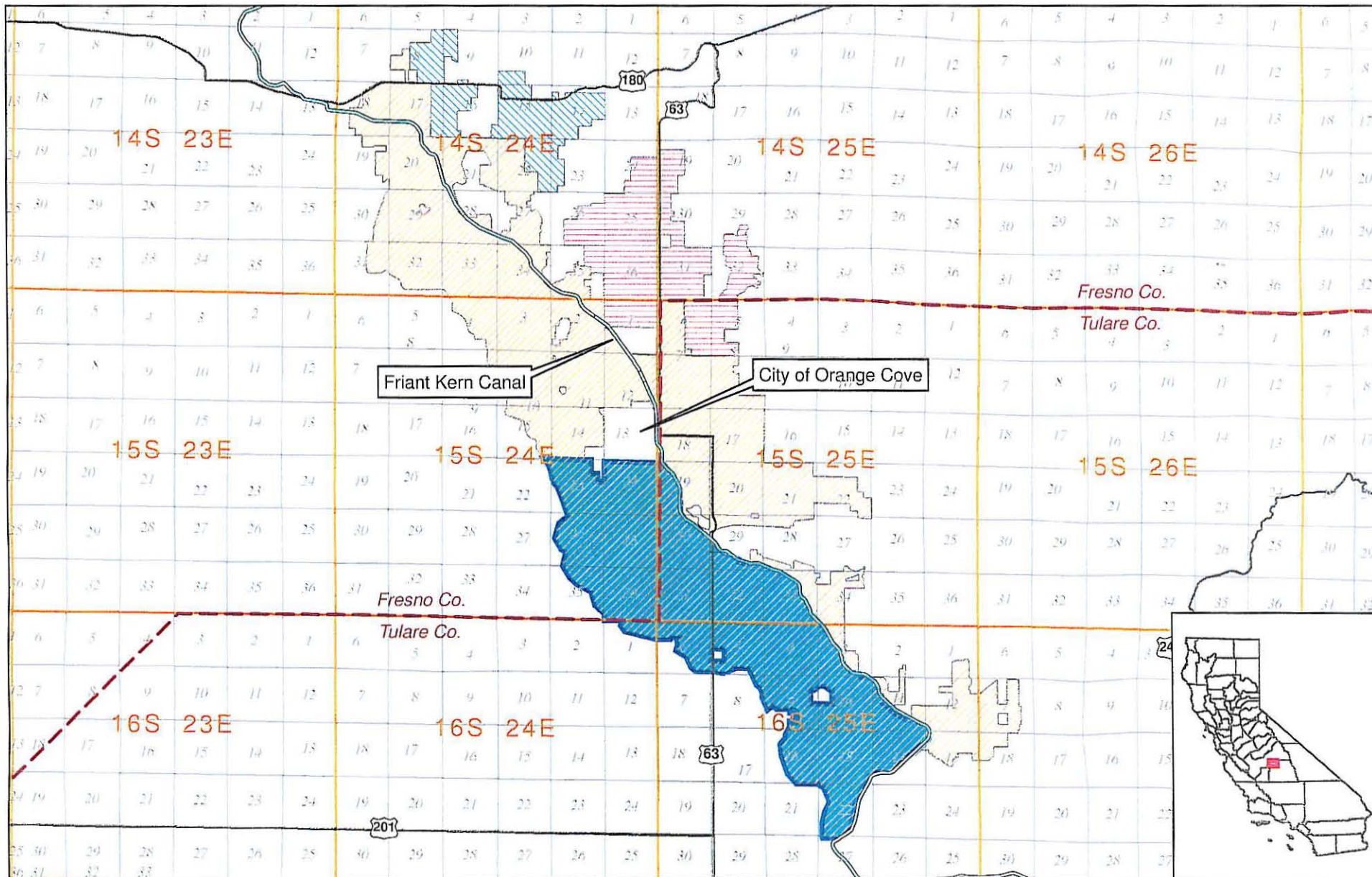


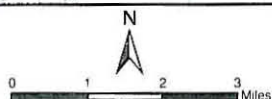
Exhibit 1-2

Groundwater Basin Map For:

Hills Valley Irrigation District
 Orange Cove Irrigation District
 Tri-Valley Water District



PROVOST & PRITCHARD
ENGINEERING CONSULTANTS
INCORPORATED



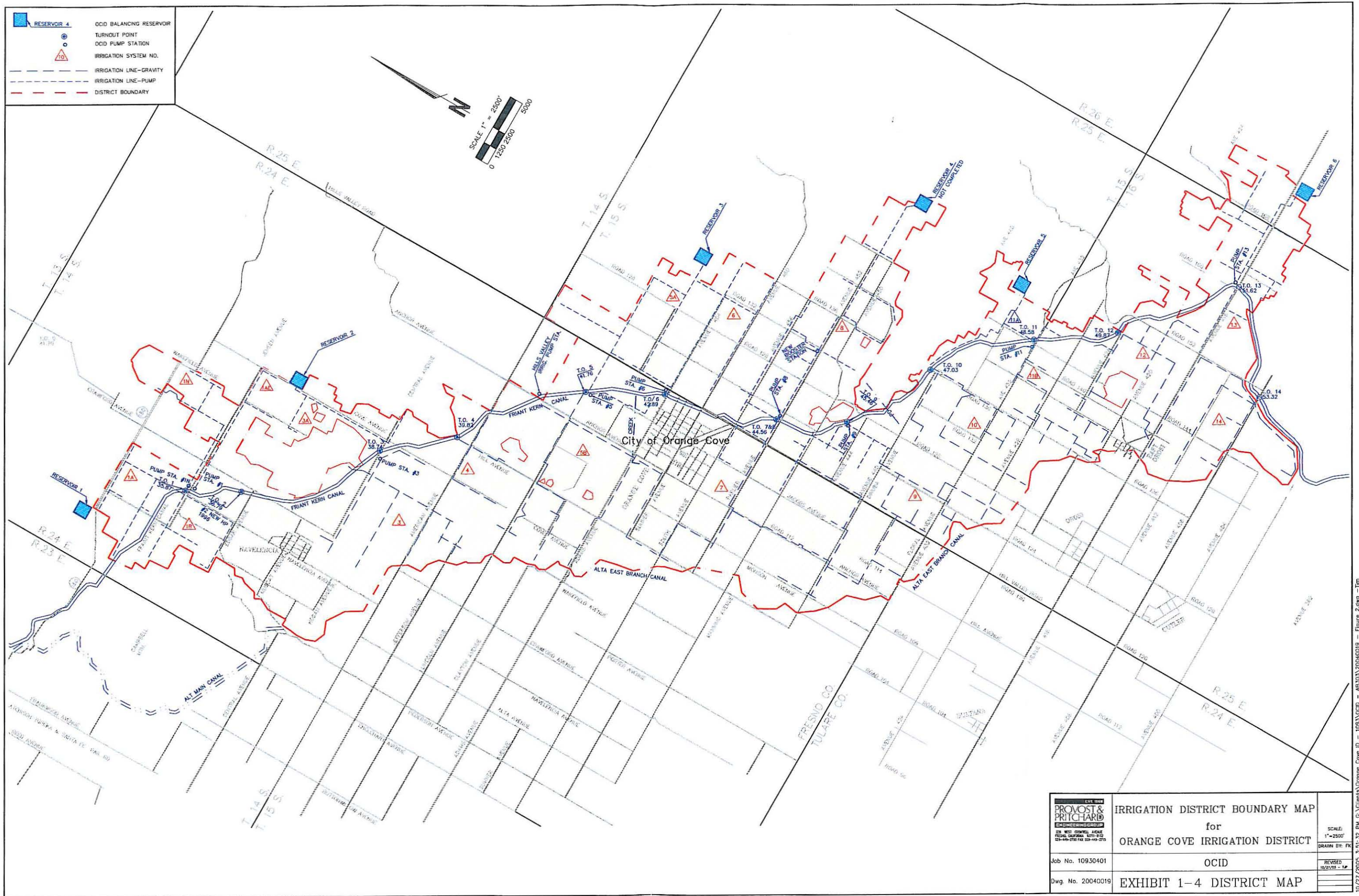
- County
- Township / Range
- Section

- HILLS VALLEY I.D.
- ORANGE COVE I.D.
- TRI-VALLEY W.D.

Usable Groundwater Supply

Exhibit 1-3

Plan Area With Usable Groundwater Supply



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2 - ISSUES IMPACTING GROUNDWATER SUPPLY

The Orange Cove Irrigation District conjunctively uses surface water with limited use of groundwater. TVWD and HVID primarily use surface water with even more limited use of groundwater than OCID. Since OCID is only able to deliver 1.4 acre-feet per acre from their surface water supplies, effective rainfall and groundwater pumping by the growers themselves are required to meet the balance of crop requirements. Unfortunately, in the Plan Area, only the southern portion of OCID has a significant, usable groundwater supply. Therefore, the Plan Area faces some significant water management challenges. Specific issues impacting the area's water supply are discussed below.

2.1 - Inadequate Dry-Year Supplies

Because the contract surface water supplies are inadequate to meet the total Plan Area needs, the availability of dry year water supplies is the most critical issue impacting the Plan Area. The main issues impacting dry-year water supplies are inadequate surface water carry-over storage and inadequate groundwater storage.

Surface Storage

Millerton Lake provides the primary surface storage element for the Friant Unit of the Central Valley Project (CVP). Although Millerton Lake has a maximum storage capacity of 520,000 acre-feet, only 385,000 acre-feet of storage is usable due to the outlet elevations into the Friant-Kern and Madera Canals. Millerton Lake lacks sufficient carry-over storage capacity to balance the wet and dry year need for conservation storage due to both the outlet conditions and the relationship of storage capacity to San Joaquin River runoff.

Groundwater Supply

The Plan Area is characterized by very limited groundwater storage capability. Most of the groundwater is a "pass through" water supply, moving into the ground in the foothills and passing along the surface or in the fractures of the bedrock through the Plan Area on its way to the greater San Joaquin Valley groundwater basin. Because of the limited supply of groundwater, it is critical that the Plan Group has a comprehensive plan for optimizing groundwater availability during dry year conditions.

2.2 - Water Transfers and Exchanges

Because of the limited availability of groundwater supplies, transfers out of the area resulting in increased groundwater use will be discouraged. However, transfers will be evaluated on a case-by-case basis and would be permitted if the water is transferred for banking purposes or the transfer is approved by the Board of Directors. OCID lacks any formal arrangements where it can exchange water between wet and dry years to offset extreme dry year shortages. However, HVID and TVWD have entered into an

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agreement with the Delano-Earlimart Irrigation District whereby they have banked a one-year supply of water that can be returned in dry years. This agreement is currently being renegotiated.

The Cross Valley Canal connects the California Aqueduct in western Kern County with lands in the central portion of Kern County. This facility allows water originating in the Delta to be delivered to lands in Kern County. Through the use of this facility, water exchanges have been made with other districts in Kern, Fresno, and Tulare Counties that would have otherwise been unable to receive west-side water supplies. The Arvin-Edison Water Storage District is the principal entity used to complete these exchanges. These exchanges have had some success in improving water reliability in the Plan Area.

2.3 - Groundwater Quality

For irrigation purposes, there are no known water quality problems that currently impact the use of groundwater in the Plan Area. The City of Orange Cove lies within the Plan Area, but does not present a major threat to groundwater quality. For municipal purposes, most groundwater in the area exceeds the permissible level of nitrates for drinking water, but is still adequate for irrigation use. The Plan Group members recognize that groundwater quality and groundwater quantity are interdependent and should be considered in an integrated manner. Therefore, they will continue to monitor groundwater quality collected by other agencies to ensure their groundwater supply is not diminished due to quality problems. See Section 3.4 – Historic Water Quality for more information on groundwater quality in the area, and Section 6.2 – Groundwater Quality Monitoring for information on groundwater quality monitoring.

2.4 - Local Agency Groundwater Management Cooperation

The Districts involved in this plan have sought formal arrangements with other districts that have good groundwater supplies for water banking arrangements. In a typical banking arrangement a district (depositor) banks its unused wet-year supplies with an agency (banker) that has a good groundwater basin. In dry years when the depositor's surface supply is short, it then calls on the water it has stored in the banker's groundwater basin. In this way, water is stored in the ground for use in years when the surface supply is insufficient to meet demands. The problem encountered most frequently is that districts willing to bank water have very limited ability to return water in a dry year condition. This further emphasizes the need for increased surface storage with a carry-over capability or a coordinated water banking effort on a regional basis.

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3 - GEOLOGY AND HYDROGEOLOGY

This section provides information on the local and regional geology, hydrogeology, historical water quality and historical groundwater levels in the Plan Area. The geology of the Orange Cove Irrigation District (OCID) is extensively documented in a report prepared by the USBR in 1947 entitled "Geologic Study of the Orange Cove Irrigation District". Much of the information presented below was obtained from this report. No other major geologic studies in the Plan Area are known to have been performed since 1947.

3.1 - Groundwater Basin

The Plan Area lies within the Kings Groundwater Basin, which is a sub-basin of the San Joaquin Valley Groundwater Basin. The Kings Groundwater Basin extends from the Sierra Nevada foothills on the east to the San Joaquin Valley trough on the west, and from the San Joaquin River on the north to roughly the Fresno County line on the south. Refer to **Exhibit 1-2** for the location of the Districts in relation to the Kings Groundwater Basin.

The Kings Basin covers an area of 976,000 acres. In general, groundwater quality throughout the Basin is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high total dissolved solids (TDS), nitrate, arsenic, and organic compounds. The aquifers are generally quite thick in the San Joaquin Valley subbasins with the groundwater wells commonly exceeding 1,000 feet in depth. Typical well yields in the San Joaquin Valley range from 300 gpm to 2,000 gpm with yields of 4,000 gpm possible. The smaller basins in the mountains surrounding the San Joaquin Valley have thinner aquifers and generally lower well yields averaging less than 500 gpm. DWR has also identified the Kings Groundwater Basin as being 'critically overdrafted'.

3.2 - Local Geology

The foothills of the Sierra Nevada bound the eastern portion of the Plan Area. Some of these foothills protrude westward as spurs into the alluvial plain of the San Joaquin Valley. These spurs form a series of coves that are characteristic of the Plan Area's eastern boundary. The western portion of the Plan Area is a transition between these coves and the alluvial plain of the valley proper. The topography is gently rolling with average slopes of 20 to 25 feet to the mile in the eastern portion, leveling off to 15 feet per mile or less in the western portion.

Alluvium and Bedrock

The soil in the area is derived mainly from granitic and quartz diorite rock with more isolated areas derived from other basin igneous materials. Roughly 80% of the Plan Area is covered by clay and clay loam soils underlain, for the most part, by iron oxide

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hardpan. The clay soils are intermingled with more pervious material in the shape of many discontinuous lenses and stringers of sandy clay, sand, and gravel. When these lands were developed for irrigation they were normally ripped to depths of 5 to 6 feet. In irrigated areas this has removed the hardpan and allowed adequate drainage during irrigation. However, the only soils conducive to groundwater recharge are along the old stream courses and the present day stream and drainage channels.

Granite rock makes up the hills surrounding the OCID on the east, forms the outlying hills, and underlies the sediments throughout the District. A granite shelf with shallow cover underlies the greater part of the Plan Area. The granite is abundantly jointed and probably faulted. The close spacing of the joints has greatly facilitated weathering. In OCID, the granite shelf slopes gently from the easterly boundary of the Plan Area, where the cover is 20 feet or less, west to a point where the cover is about 100 feet. At this point the shelf drops off sharply. The start of the deeper alluvium is approximated by the existing Atchison, Topeka, and Santa Fe railroad right-of-way. Lines of equal depth to granite within the Plan Area are shown in **Exhibits 3-1**. In HVID and TVWD, the depth to 'hard' rock varies greatly within short distances; some areas have rock outcroppings that come to the surface and then drop off rapidly to depths of greater than 20 feet.

3.3 - Hydrogeologic Characteristics

Aquifer Characteristics

The aquifer consists of clay, sands, decomposed granite, and hard rock. Sandy lenses in the sediments are water-bearing but, as a rule, are discontinuous and have low yields. The granite and metamorphic rocks, where unweathered, are virtually impermeable. However, the coarse-grained granite weathers easily and breaks down into loose and coarse-grained mass. The weathered granite is one of the most important aquifers in the Plan Area and is the only important one in those portions east of the Friant-Kern Canal where the granite is within 30 feet of the surface. The thickness of the weathered zone varies greatly and has not been defined with any reliable methodology.

Groundwater Movement/Transmissivity

The lateral flow of groundwater from one portion of OCID to another is believed to be impeded by underground ridges and troughs on the surface of the granite shelf underlying the District. However, no part of the Orange Cove area is considered an enclosed basin. There are no granite barriers to prevent the ingress of groundwater from the regions to the west and south, or to prevent the egress of groundwater into those regions.

In the Hills Valley and Tri-Valley areas, the depth to the hard rock varies from 2 to 20 feet below the ground surface. Generally, the materials over the base rock are

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relatively coarse and permeable. The parent rock material has cracks and fissures that promote some water flow. The combination of the permeable nature of these upper soils, along with the gradient caused by the dipping earth materials, promotes the lateral movement of excess rainfall and irrigation water downgradient. This lateral movement may be partially impeded in some areas by barriers or by the reduction in the groundwater gradient in relatively flat, swale-like areas.

Groundwater Storage

The proximity of the granite layer beneath the surface of the Plan Area allows for little storage capacity in the shallow alluvium above. The upper few feet of the granite layer are the most decomposed and offer the largest storage capacity. This is also the most defined aquifer in the Plan Area. Hence, there is limited capacity available for cyclic storage of groundwater.

Specific Yield

Specific yield is the ratio of the volume of water that a given mass of saturated rock or soil will yield to that volume of mass. Specific yields in OCID were estimated by the USBR based on twenty percolation tests and data from similar groundwater basins (USBR, 1947). Specific yields for general soils types within OCID are listed in Table 3.1.

Table 3.1 – Specific Yield by Soil Type

Soil Type	Specific Yield
Gravel and coarse sand	34.8%
Medium and fine sand, sandy loam	24.2%
Very fine sand, and sandy silt	7.5%
Fine sandy loam	5.8%
Silty clay, sandy clay loam, sandy clay	4.2%
Clay, clay loam	2.9%

Specific yields by sub-area are listed in Table 3.2. The sub-areas are illustrated on **Exhibit 3-2**.

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Table 3.2 - Specific Yield by Sub-Area

Sub-Area	Specific Yield
East Orosi	6.5%
Sand Creek	8.4%
Alta and Sand Creek	8.3%
Alta Canal	8.3%
Hills Valley	8.2%
Citrus Cove	7.8%
Wahtoke	7.8%

Well Yields

Well yields in the Plan Area are generally poor due to the less permeable, fine-grained shallow soils, which are predominant over the greater part of the Plan Area. The most favorable pumping area is in the zone where depth to granite exceeds 100 feet. In addition, in some wells, a considerable amount of the yield comes from the decomposed granite.

The groundwater basin, per se, is almost non-existent in the district. The southern portion of OCID that is west of the Friant-Kern Canal contains some basin water (see **Exhibit 1-3**). Typically, this is the area where wells have capacities greater than 100 gallons per minute. In general, the rest of OCID has low groundwater yield. In HVID, TVWD and the northern portion of OCID (Navalencia Area) some groundwater is available from some shallow wells and wells drilled into hard rock. The yields of these wells are small, normally 30-100 gal/min, and in most cases would only support a limited amount of permanent farming in the absence of surface water. However, these wells are useful as a supplemental irrigation supply and in controlling the buildup of a perched water table in some areas.

In the area of shallow alluvium (which covers the entire area east of the Friant-Kern Canal) the decomposed granite forms a contact between the granite shelf and the overlying alluvium. This area is relatively permeable and should afford good drainage when the slope of the water table is sufficiently steep to maintain flow of the groundwater.

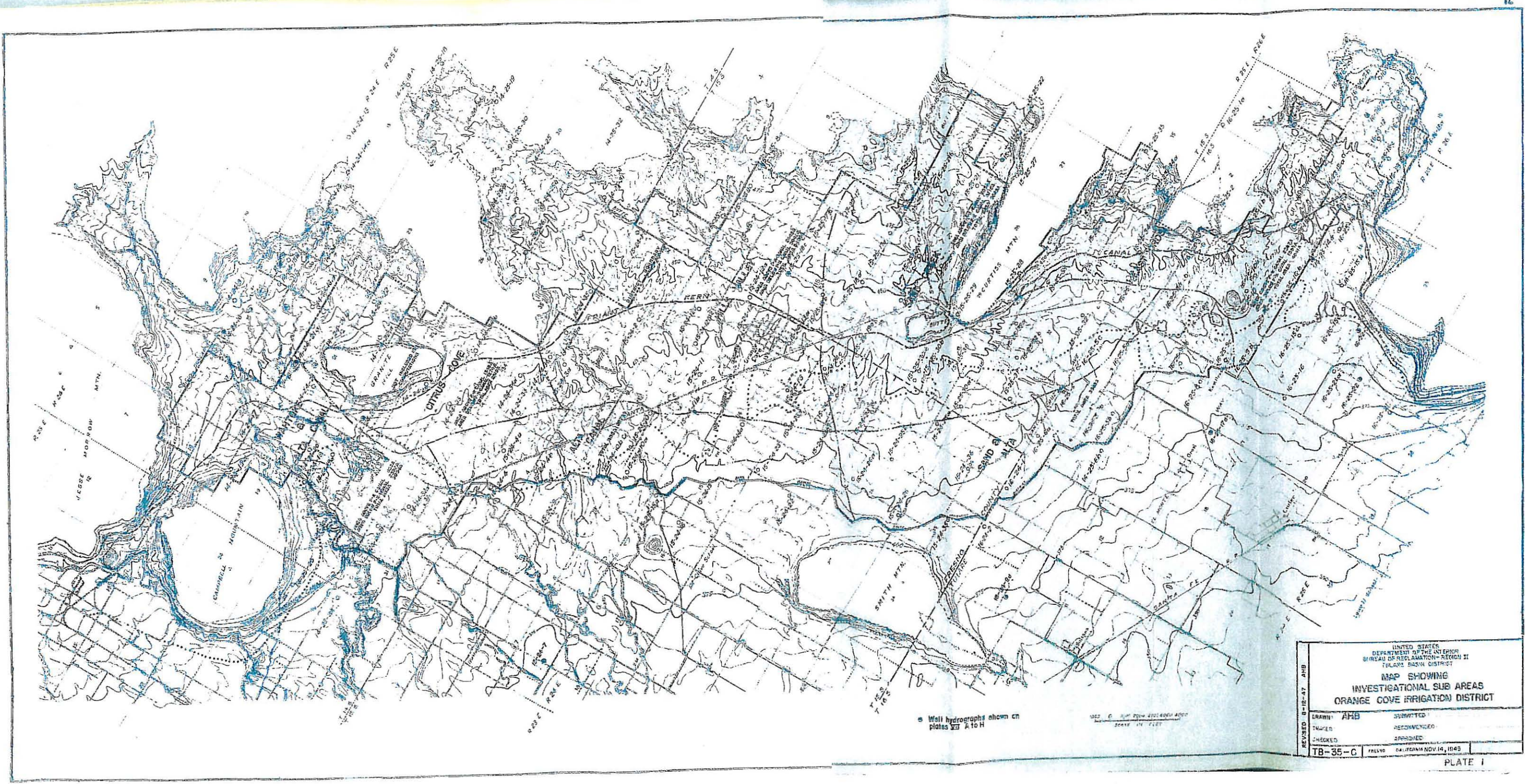
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3.4 - Historic Water Quality

Groundwater in the area is generally of suitable quality for irrigation purposes and there are no known water quality problems that currently impact the agricultural water use in the Plan Area. Although the City of Orange Cove lies within the Plan Area, and the City's Wastewater Treatment Plant has a groundwater-monitoring network under regulation by the Regional Water Quality Control Board, there is no indication, to date, that there are any major threats to the groundwater quality. For municipal purposes, most groundwater in the area of the treatment plant exceeds the permissible level of nitrates for drinking water, but is still suitable for agriculture.

3.5 - Historic Groundwater Levels

Groundwater levels in the Plan Area have been monitored from numerous wells since the early 1900's. Long-term groundwater level data is included in the Orange Cove Irrigation District's database and can be found on the Department of Water Resources website. After OCID obtained a Central Valley Project water contract in the late 1940's the groundwater level began to rise and is now fairly stable. However, the groundwater level does fluctuate on the order of a few feet from year to year. These recent water table fluctuations are likely indicative of the limited storage capacity available in the immediate vicinity. In the area with a sustainable groundwater supply, depth to groundwater ranged from about 10 feet to 60 feet in 2002.



Wall hydrograph shown on plates A to H

Scale 1:100,000

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION- REGION II TULARE BASIN DISTRICT	
MAP SHOWING INVESTIGATIONAL SUB AREAS ORANGE COVE IRRIGATION DISTRICT	
REVISED 8-18-47	AMB
DRAWN	SUBMITTED
CHECKED	RECOMMENDED
TB-35-C	FILED CALIFORNIA NOV 14, 1945

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4 - BASIN MANAGEMENT OBJECTIVES

The general objectives of the Plan Group are to enhance and preserve the long-term viability of the groundwater supply within the Plan Area with respect to both quantity and quality by engaging in local management activities.

The Plan Groups basin management objectives include the following primary elements:

- Stakeholder Involvement;
- Groundwater Monitoring;
- Groundwater Resources Protection;
- Groundwater Sustainability;
- Groundwater Operations; and
- Groundwater Planning and Management.

This plan includes a number of activities that the Districts intend to evaluate or undertake for each of these primary elements. Such activities may be performed solely by an individual District or in cooperation with one or more local agencies, private parties, or other District(s) in the Plan Group. Specific details on the basin management objectives are found in subsequent sections. The subsequent sections describe existing or planned management actions to achieve the management objectives, and explain how each basin management objective will contribute to a more reliable groundwater supply.

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5 - STAKEHOLDER INVOLVEMENT

5.1 - Relationships with Other Agencies

The Plan Group is located in the Kings Groundwater Basin, which extends beyond many political boundaries and includes other municipalities, irrigation districts, water districts, private water companies, and private users. In addition, the City of Orange Cove is an enclave within the Plan Area. This emphasizes the importance of inter-agency cooperation, and the Plan Group members have historically made efforts to work conjunctively with many of these other water management agencies.

Below is a list of agencies that the Plan Group has worked with in managing the local groundwater:

- County of Fresno
- City of Orange Cove
- Tulare County
- Alta Irrigation District
- Friant Water Authority
- Department of Water Resources
- United States Bureau of Reclamation

Existing cooperative efforts with these agencies will be maintained and are described in Section 5.2.

Over 95 percent of the Fresno County residents are directly dependent upon groundwater for domestic and industrial purposes. The County of Fresno therefore recognizes the need for proper groundwater management and in their 1996 Groundwater Management Plan, the County of Fresno states:

“As the only agency overlying all groundwater basins within the County, the County of Fresno intends to provide the necessary structure assuming responsibility for overall coordination of groundwater management activities within its boundaries. As in all groundwater management elements contemplated in this plan, the County’s effort will be one of cooperation with affected agencies.”

The Plan Group will work cooperatively with Fresno County to facilitate this goal. Fresno County also has an ordinance regulating the extraction and transfer of water from the County (see **Appendix B**). The Plan Group supports and adheres to this ordinance. The Plan Group will also work cooperatively with Tulare County on groundwater management efforts.

5.2 - Plan to Involve Other Agencies

The District will work cooperatively with other agencies within the Kings Groundwater Basin to facilitate protection and enhancement of the regional groundwater resources, and to avoid, whenever possible, duplicative or inconsistent groundwater management

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efforts. Cooperative working relationships can be achieved through the sharing of data, inter-agency committees, interagency meetings, memorandums of understandings, and formal agreements.

The Districts will continue to participate in the following inter-agency agreements and committees:

1. Meetings and cooperative efforts involving the joint authors of this Plan (Orange Cove Irrigation District, Hills Valley Irrigation District and Tri-Valley Water District)
2. Sharing of groundwater level data with the Alta Irrigation District
3. Submission of groundwater level data to the DWR, USBR and Fresno County
4. Meetings with a Groundwater Advisory Committee (see section 5.3)

In addition, OCID will also encourage the City of Orange Cove to resume tertiary treatment at their water treatment plant. OCID formerly bought treated water from the City and delivered it to their canal system for agricultural use. The City of Orange Cove is now only using secondary treatment methods and hence OCID has suspended their use of the treated water. OCID sees the benefits to both parties if tertiary treatment and deliveries to OCID canals are resumed. These benefits would include local water conservation, reduced mounding problems near the water treatment plant, income for the City of Orange Cove, and a more reliable water supply for OCID.

5.3 - Groundwater Advisory Committee

A Groundwater Advisory Committee (Committee) has been formed to update, plan, monitor and evaluate the technical progress made in achieving the goals of this Plan. This committee has also assisted with the Orange Cove Irrigation District's Groundwater Monitoring and Drought Preparedness Program Study (funded under AB 303 Local Groundwater Assistance Fund), and will assist when possible with other special groundwater projects. The committee is comprised of landowners who volunteered to participate, OCID staff, and a representative for neighboring irrigation and water districts.

The Committee will attempt to meet annually or more frequent if deemed appropriate and will have the following responsibilities:

1. Review trends in groundwater levels;
2. Review trends in groundwater quality;
3. Evaluate the effectiveness of current groundwater management policies and facilities;
4. Discuss the need for new groundwater management policies and procedures;
5. Discuss the need for new groundwater facilities;

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6. Evaluate the progress of on-going groundwater related projects;
7. Assess the overall progress in implementing the programs outlined in the Groundwater Management Plan;
8. Recommend updates or amendments to the Groundwater Management Plan;
9. Provide coordination among the Plan Group (OCID, TVWD and HVWD);
10. Monitor and evaluate the implementation of the proposed OCID drought preparedness program;
11. Educate the landowners on the merits and importance of various groundwater management activities, such as water level monitoring and water quality testing;
12. Document the Committee's comments and recommendations so they can be incorporated into annual groundwater reports.

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6 - MONITORING PROGRAM

The Plan Group's groundwater monitoring program includes two elements: groundwater-level monitoring and groundwater-quality monitoring. The monitoring program is intended to:

1. Provide warning of potential future problems;
2. Use data gathered to generate information for water resources evaluation;
3. Develop meaningful long-term trends in groundwater characteristics;
4. Provide data comparable from place to place in the Plan Area; and
5. Better characterize the quality of well water in the Plan Area.

Following is a discussion on groundwater level monitoring, groundwater quality monitoring and monitoring protocols. **Exhibit 6-1** is a map illustrating the monitoring sites for groundwater levels and groundwater quality.

6.1 - Groundwater Level Monitoring

The Orange Cove Irrigation District has formerly measured water levels each spring and fall in about 30 wells. They plan to expand the program to include 60 to 70 wells. **Exhibit 6-1** illustrates the location of all the wells that would be monitored. **Exhibit 6-2** includes a list of these wells and their attributes (well depth, screened intervals, type of well, etc.).

The groundwater level data will be used to generate groundwater elevation contours, estimate groundwater storage, evaluate short-term and long-term trends in water levels, and evaluate the impacts of rainfall, surface water availability, groundwater recharge, and other factors on groundwater levels.

Orange Cove Irrigation District Database

The OCID updated their groundwater database in 2005. The new database includes an improved user interface, additional database fields, and a link to Geographic Information Systems software. The database stores the following information:

1. Groundwater level data for about 30 wells (semi-annual measurements from 1990-2003);
2. Well hydrographs;
3. Specific well attribute information including pump type, model, motor size, discharge pipe size, and a digital photo of the well;
4. Surveyed locations and elevations for each well; and
5. Various reports for presenting and evaluating changes in groundwater levels.

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Groundwater Contour Maps

Groundwater contour maps will be prepared for the Plan Group's Annual Groundwater Report. Groundwater contour maps are good analytical tools for determining the effects and impacts of natural (weather) and artificial (man-made) phenomena on the aquifer, including droughts, wet years, extraction, and recharge activities. Furthermore, this mapping will provide excellent information for locating future well sites.

Groundwater Storage

The quantity of groundwater storage will be monitored using periodic groundwater level data. The storage is calculated with groundwater level data and specific yield values that were provided in a USBR report prepared in the 1940's (see Section 3.3). During future geologic investigations, the specific yield values will be reviewed and verified, when possible.

Sharing of Groundwater Level Data

The OCID currently participates in the Semi-annual Groundwater Measurement Program administered by the USBR. This program requires OCID to take water level measurements from specified wells two times a year. The District will continue to share groundwater level data with the USBR and will provide the data to Fresno County when they develop a planned county-wide groundwater database. The neighboring Alta Irrigation District also has plans to survey their wells and create a groundwater database. Therefore, the Plan Group will seek a data sharing agreement with Alta Irrigation District to share groundwater level data near the OCID and Alta ID border.

6.2 - Groundwater Quality Monitoring

The Plan Area has not historically had groundwater quality problems and consequently the Plan Group has only performed water quality testing on a sporadic and limited basis. Nevertheless, the Plan Group has a tentative goal to develop a program to monitor groundwater quality. The program would primarily comprise the collection and review of groundwater quality tests performed by others, such as the City of Orange Cove, Department of Water Resources, and United States Geologic Survey, and possibly some limited new testing if it is deemed necessary and approved by the Board of Directors. This program would be designed to monitor the Plan Area in enough detail that any new water quality problems are detected in time to remedy them. The program would also include a database to store, organize and evaluate the water quality data. **Exhibit 6-1** shows locations of wells that the Districts could possibly use in future monitoring efforts, subject to landowners granting permission.

Objectives of Groundwater Quality Monitoring

A groundwater quality-monitoring program will have one or more of the following objectives:

- 1) Spatially characterize water quality according to soils, geology, surface water quality, and land use;

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- 2) Establish a baseline for future monitoring;
- 3) Compare constituent levels at a specific well over time (i.e. years and decades);
- 4) Determine the extent of groundwater quality problems in specific areas;
- 5) Identify groundwater quality protection and enhancement needs;
- 6) Determine water treatment needs;
- 7) Identify impacts of recharge and banking projects on water quality;
- 8) Identify suitable crop types that are compatible with the water characteristics; and
- 9) Monitor the migration of contaminant plumes.

Private Well Testing

The Plan Group does not currently operate their own production wells. However, there are many private wells in the Plan Area. Unfortunately, these types of wells are usually monitored the least. Most of the testing performed on these wells is completed at the owner's expense, and unless the County Health Department lab performs the lab analysis, no record may be kept on the results of the testing. Consequently, the Plan Group will encourage landowners to perform more frequent testing, especially to test new wells, and voluntarily submit the data to their respective District for inclusion in the Districts' records. To help achieve this goal, the landowners will be educated on the importance of collecting and compiling water quality data to avert future problems.

City of Orange Cove Water Quality Monitoring

The City of Orange Cove presently monitors groundwater quality in the vicinity of their wastewater treatment facility. OCID analyzed the data in 2004 and determined that the groundwater in the vicinity of the wastewater treatment plant was not suitable for human consumption without treatment, but was still acceptable for agricultural use. The City of Orange Cove has several monitor wells and plans to expand their monitoring program with the construction of more monitor wells. OCID will continue to collect and review the data from the City's monitoring program to help foresee any potential problems for agricultural water users. The adequacy of the City's monitoring program will also be periodically reviewed.

Pest Management Zones

The Counties of Fresno and Tulare have implemented Pest Management Zones (PMZ) to protect against harmful pesticides entering the groundwater. This program is primarily designed to protect the quality of the groundwater used for human consumption. Degradation of groundwater utilized for crop use is not anticipated, but will be monitored for possible contamination from pesticides.

6.3 - Monitoring Protocols

Monitoring protocols are necessary to ensure consistency in monitoring efforts and are required for monitoring evaluations to be valid. Consistency should be reflected in factors such as location of sample points, sampling procedures, testing procedures, and possibly even time of year when the samples were taken. Without such common

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ground, comparisons between and among reports must be carefully considered. Consequently, more uniform data gathering procedures are proposed in order to increase the reliability of analyses. Specific protocols for water level and water quality monitoring are discussed below.

Water-Level Monitoring Protocols

General protocols have been used for the groundwater level-measuring program. These protocols include:

1. Landowners will be contacted for permission to access their property prior to any fieldwork;
2. Perform all water level measurements in as short a period as possible;
3. Perform year to year measurements at the same time of the year;
4. Document the measurement reference point for each well as well as the measuring device and calibration date for the measuring device;
5. Document the date and time of each measurement;
6. Test each well twice, or more if needed, until consistent results are obtained; and
7. If there is reason to suspect groundwater contamination, water level measuring equipment will be decontaminated using standardized decontamination procedures, and in general, measurements will proceed from the least to the most contaminated wells.

These protocols, and any new protocols that are adopted, will be documented in future Annual Groundwater Reports.

Water-Quality Monitoring Protocols

The following water-quality monitoring protocols will be followed for existing and future monitoring efforts:

- 1) Landowners will be contacted for permission to access their property prior to any fieldwork.
- 2) Adequate pumping time prior to sample collection with documentation of stabilized parameters;
- 3) Proper sample containers, preservatives, and holding times;
- 4) Secure chain-of-custody procedures;
- 5) Ideally, use of the same laboratory for all testing, except for split samples sent to separate laboratories for comparison;
- 6) Testing will only be performed at accredited, state-certified laboratories that use proper quality control and quality assurance procedures;
- 7) All samples will be given a quality assurance code, which represents the relative confidence in the water sample. The following codes will be used:
 - 0: No information available to rank the quality assurance;

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- 1: Questionable measurement; some quality assurance procedures not followed
 - 2: Reliable measurement with all quality assurance procedures followed
- 8) Some testing will include spiked, duplicate and field-blank samples for comparison to genuine samples;
 - 9) Proper handling procedures (e.g. placing the containers in an ice chest immediately after collection);
 - 10) Documentation of all protocols and procedures that are used;
 - 11) Uniform time of year for sampling (during periods of both minimal pumping in the winter and heavy pumping in July and August);
 - 12) Document the name, contact information, and qualifications of the individuals taking measurements; and

6.4 - Land Surface Subsidence

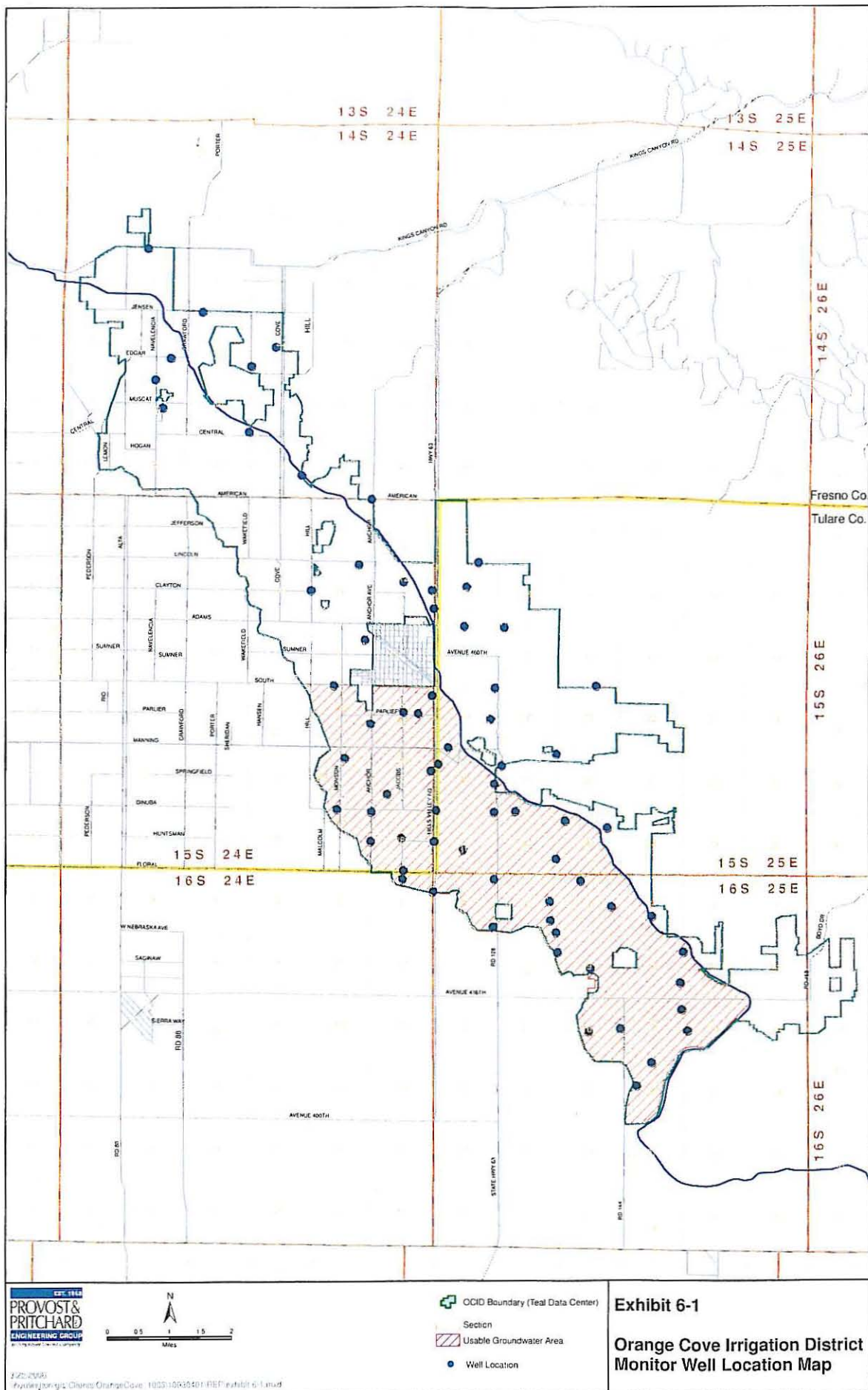
No information is available on historic land subsidence in the area. The area may have experienced land subsidence in the early 1900's when it was prevalent in the San Joaquin valley. However, no significant land subsidence is known to have occurred in the last 50 years as a result of land development, water resources development, groundwater pumping, or oil drilling. Lands within the Plan Area will be observed for land subsidence, and, if land subsidence becomes a problem, this Plan will be amended to include preventative and mitigative land subsidence measures.

6.5 - Surface Water

Surface water flows may impact groundwater levels and groundwater quality if the two water sources are hydrologically connected. Alternatively, groundwater pumping may also affect nearby surface water if the surface supplies are hydrologically connected to the groundwater.

Within the District, surface flows only exist in a few ephemeral streams including Sand Creek, Wooten Creek, Wahtoke Creek and some smaller intermittent streams. The District does not divert water from these streams for irrigation or groundwater recharge, however considerable quantities of the streamflow are believed to infiltrate in the streambed and replenish the groundwater supply. No information is available on the quality of the stream water, but it is not believed to have any water quality problems. Flows and water quality are not currently measured in any of the streams.

When importing water for irrigation, the Plan Group considers not just the cost but also the quality of the water to be used for irrigation. Most of the surface water supply is delivered through the Friant-Kern Canal. The quality of this water is very good, ranging in total dissolved solids from about 30 to 50 mg/L. The Plan Group will likewise be cognizant of water quality issues of local streams and address water quality issues if they arise.



Orange Cove Irrigation District Well Attribute Report

Exhibit 6-2

Well ID	Well Type	Status	Foundation	Power Source	HP	Discharge Size(in)	Discharge Direction	PGE Tag #	Well Casing Diameter(in)	Ground Surface Elev(ft) NAVD88	Ref Point Elev(ft) NAVD88	New Well To Monitor*
14S23E13C001MX												
14S24E17C001MX	MONITOR	ACTIVE	NONE	NONE	0	0	NONE	0	9	462.85	464.95	
14S24E20Q001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	10	6	S	630R97	0	428.78	430.58	YES
14S24E21D001MX	MONITOR	INACTIVE	NONE	NONE	0	0	NONE	0	12	450.15	450.15	
14S24E21H001MX										464.00	464.50	
14S24E22L001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	N	449816	0	486.82	486.92	
14S24E22N001MX	MONITOR	ACTIVE	POOR CONCRETE	ELECTRIC	5	3	SW	R43268	0	487.78	488.28	
14S24E26R001MX												
14S24E26R002MX												
14S24E28R001MX	MONITOR	ACTIVE	NONE	NONE	0	0	NONE	0	6	436.21	437.21	
14S24E29C001MX	SUBMERSE AG	ACTIVE	POOR CONCRETE	ELECTRIC	0	6	N	R99335	0	432.04	432.64	
14S24E29K001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	7	4	E	297036	0	430.38	430.68	
14S24E31G001MX												
14S24E34J001MX	MONITOR	ACTIVE	NONE	NONE	0	0	NONE	0	6	449.05	450.35	
15S24E02A001MX	AG	INACTIVE	NONE	NONE	5	4	NW	0	0	449.12	449.72	
15S24E10H001MX	SUBMERSE DOM	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	N	0	0	415.61	415.76	
15S24E10L001MX												
15S24E11A001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	W	95T541	0	429.91	430.51	
15S24E11G001MX												
15S24E12F001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	N	1847R	0	435.56	436.46	

Tuesday, March 28, 2006

*Well added to monitoring network in 2005

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Well ID	Well Type	Status	Foundation	Power Source	HP	Discharge Size(in)	Discharge Direction	PGE Tag #	Well Casing Diameter(in)	Ground Surface Elev(ft) NAVD88	Ref Point Elev(ft) NAVD88	New Well To Monitor*
15S24E12H001MX	SUBMERSE DOM	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	S	X90850	0	444.67	445.42	
15S24E12J001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	SE	454H31	0	441.90	442.65	
15S24E14H001MX	AG	ACTIVE	GOOD CONCRETE	NONE	0	0	NONE	685T38	0	418.02	418.72	
15S24E15K001MX	AG	ABANDONED	NONE	NONE						397.00	397.50	
15S24E23C001MX	AG	INACTIVE	POOR CONCRETE	NONE	0	0	NONE	0	10	406.38	406.78	
15S24E23J001MX	SUBMERSE DOM	ACTIVE	POOR CONCRETE	ELECTRIC	0	2	N	0	0	411.31	411.81	
15S24E24A001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	S	R49757	0	433.72	434.32	YES
15S24E24G001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	4	S	88T186	0	424.29	424.94	YES
15S24E24G002MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	W	07R377	10	416.53	417.33	YES
15S24E24P001MX	AG	ABANDONED	NONE	NONE						416.10	416.10	
15S24E24Q001MX	AG	ABANDONED	NONE	NONE						418.00	420.00	
15S24E25H001MX	AG	ACTIVE	POOR CONCRETE	ELECTRIC	30	8	E	R06604	0	427.75	428.65	YES
15S24E25L001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	6	W	R08436	0	411.48	414.58	YES
15S24E26B001MX	AG	INACTIVE	POOR CONCRETE	NONE	0	0	NONE	0	10	404.90	404.90	
15S24E35C001MX	AG	INACTIVE	POOR CONCRETE	NONE	0	0	NONE	0	0	400.14	401.14	YES
15S24E35J001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	15	6	N	R93505	0	398.52	399.12	YES
15S24E36D001MX	AG	INACTIVE	GOOD CONCRETE	NONE	0	0	NONE	287T21	0	405.78	405.78	YES
15S24E36F001MX	AG	INACTIVE	GOOD CONCRETE	NONE	0	0	NONE	0	8	406.56	407.46	
15S24E36Q001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	30	8	S	R68185	0	400.11	401.06	YES
15S25E06Q001MX	MONITOR	INACTIVE	NONE	NONE	0	0	NONE	0	8	466.12	468.82	
15S25E07G001MX	SUBMERSE DOM	ACTIVE	GOOD CONCRETE	ELECTRIC	0	1	S	98M932	0	459.43	459.53	
15S25E08C001MX												
15S25E08N001MX												

Well ID	Well Type	Status	Foundation	Power Source	HP	Discharge Size(in)	Discharge Direction	PGE Tag #	Well Casing Diameter(in)	Ground Surface Elev(ft) NAVD88	Ref Point Elev(ft) NAVD88	New Well To Monitor ^a
15S25E16Q001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	6	W	97323R	0	491.10	491.70	
15S25E17D001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	E	R43690	0	464.53	465.13	
15S25E17G001MX												
15S25E18C001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	5	3	E	R97996	0	447.48	447.68	
15S25E19A001MX	MONITOR	INACTIVE	GOOD CONCRETE	NONE	0	0	NONE	0	3	458.66	459.41	
15S25E19J001MX	SUBMERSE DOM	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	SW	13639H	0	453.61	453.86	
15S25E19N001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	E	91482R	0	435.62	436.32	YES
15S25E29A001MX	SUBMERSE AG	INACTIVE	GOOD CONCRETE	NONE	0	2	N	0	0	463.96	464.46	
15S25E29E001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	WIND	0	2	S	0	8	438.82	440.52	
15S25E29P001MX	DOMESTIC	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	S	R43142	0	424.84	425.79	YES
15S25E30D001MX	SUBMERSE DOM	INACTIVE	GOOD CONCRETE	ELECTRIC	0	2	E	0	0	430.71	432.11	YES
15S25E30J001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	E	61T869	0	432.78	432.98	YES
15S25E30N001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	N	654R84	0	415.79	416.19	YES
15S25E31A001MX	MONITOR	INACTIVE	GOOD CONCRETE	NONE	0	0	NONE	0	3	426.82	428.22	
15S25E31L001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	4	S	4077R6	0	411.33	412.43	YES
15S25E31M001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	S	639R23	0	409.85	410.35	YES
15S25E32F001MX	AG	ABANDONED	NONE	NONE						415.00	415.50	
15S25E32R001MX	SUBMERSE AG	ACTIVE	POOR CONCRETE	ELECTRIC	0	3	N	8834R3	0	409.10	409.60	
15S25E33A001MX	AG	INACTIVE	POOR CONCRETE	NONE	0	4	S	0	12	442.19	442.99	YES
15S25E33D001MX	AG	INACTIVE	POOR CONCRETE	NONE	0	0	NONE	0	0	426.61	427.31	
16S24E01B001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	20	8	W	060R96	0	397.80	398.60	YES
16S24E07A001MX												
16S24E26M001MX												

Well ID	Well Type	Status	Foundation	Power Source	HP	Discharge Size(in)	Discharge Direction	PGE Tag #	Well Casing Diameter(in)	Ground Surface Elev(ft) NAVD88	Ref Point Elev(ft) NAVD88	New Well To Monitor*
16S25E03K001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	W	50692R	0	436.80	437.80	
16S25E04C001MX	SUBMERSE DOM	ACTIVE	GOOD CONCRETE	ELECTRIC	0	2	N	4191T8	0	418.50	419.00	
16S25E04J001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	E	54402R	0	415.68	416.38	YES
16S25E05H001MX	AG	INACTIVE	GOOD CONCRETE	NONE	0	0	NONE	0	10	402.09	403.89	YES
16S25E05R001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	6	S	2885R9	0	395.51	396.31	YES
16S25E05R002MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	4	E	9810R9	0	395.04	395.84	YES
16S25E06A001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	4	E	54557R	0	406.45	407.45	YES
16S25E06E001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	5	N	R44546	0	394.92	396.27	YES
16S25E06R001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	E	9M6853	0	392.77	393.37	YES
16S25E09E001MX	SUBMERSE AG	ACTIVE	POOR CONCRETE	ELECTRIC	0	5	S	5624R7	0	392.23	393.18	YES
16S25E09K001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	3	E	46R414	0	399.26	400.76	YES
16S25E10J001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	6	N	92853R	0	422.62	423.22	
16S25E11E001MX	SUBMERSE DOM	ACTIVE	GOOD CONCRETE	ELECTRIC	0	1	W	0	0	428.76	429.26	
16S25E14M001MX	SUBMERSE AG	ACTIVE	GOOD CONCRETE	ELECTRIC	0	4	N	295T15	0	410.48	411.43	YES
16S25E15A001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	10	6	N	R43379	0	411.18	411.68	YES
16S25E16H001MX	MONITOR	ACTIVE	NONE	NONE	0	0	NONE	0	3	401.30	403.20	
16S25E16L001MX	AG	ACTIVE	GOOD CONCRETE	ELECTRIC	15	6	SE	88480R	0	392.75	393.10	YES
16S25E22C001MX	SUBMERSE AG	ACTIVE	NONE	ELECTRIC	0	4	E	689T33	0	394.02	395.12	
16S25E22E001MX	SUBMERSE AG	ACTIVE	NONE	ELECTRIC	0	4	S	49559T	8	389.61	391.51	

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7 - GROUNDWATER RESOURCES PROTECTION

7.1 - Well Abandonment

Proper destruction of abandoned wells is necessary to protect groundwater resources and public safety. Abandoned or improperly destroyed wells can result in contamination from surface sources, or undesired mixing of water of different chemical qualities from different stratas.

The administration of a well construction, abandonment and destruction program has been delegated to the Counties by the State legislature. Accordingly, Fresno County has adopted a permitting program consistent with Department of Water Resources Bulletin 74-81 and administers a permit program to assure proper construction, abandonment, and destruction of groundwater wells within Fresno County.

The Plan Group will properly abandon their own wells when they are no longer useful. In addition, the Plan Group will encourage landowners and developers to consider converting unusable wells to monitor wells, rather than abandon them, so that they can become a part of the Plan Group's groundwater monitoring program.

7.2 - Wellhead Protection

Need for Wellhead Protection

Contaminants from the surface can enter an improperly designed or constructed well along the outside edge of the well casing or directly through openings in the well head. A well is also the direct supply source to the customer, and such contaminants entering the well could then be pumped out and discharged directly into the distribution system. Therefore, essential to any wellhead protection program are proper well design, construction, and site grading to prevent intrusion of contaminants into the well from surface sources.

Furthermore, since wells can be a direct conduit to the aquifer, they must be properly destroyed and abandoned or they will provide an unimpaired route for pollutants to enter the groundwater, particularly if pumping equipment is removed from the well and the casing is left uncapped. Well Abandonment is discussed in Section 7.1.

Wellhead Protection Policy

Wells constructed by the Plan Group will be designed and constructed in accordance with DWR Bulletin 74-81. In addition, the Plan Group will encourage landowners to follow the same standard for privately owned wells. DWR Bulletin 74-81 provides specifications for the following:

- Methods for sealing the well from intrusion of surface contaminants;

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- Covering or protecting the boring at the end of each day from potential pollution sources or vandalism;
- Site grading to assure drainage is away from the well head;
- Set-back requirements from known pollution sources; and
- Some flexibility will be afforded to new well construction technologies that are protective of the beneficial uses of groundwater.

Wellhead Protection Area

As defined in the Federal Safe Drinking Water Act Amendments of 1986, a wellhead protection area is "the surface and subsurface area surrounding a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield." The three Districts have randomly spaced wells throughout the Plan Area. Therefore, the entire Plan Area is treated as a wellhead protection area.

7.3 - Saline Water Intrusion

Saline water intrusion is not currently an identified problem in the Plan Area. However, the Plan Group will monitor water quality in a manner that provides management information about salinity in the area. Should saline intrusion become a problem in the future, a plan amendment will be prepared. In addition, the Plan Group strives to prevent the importation of saline surface waters that could ultimately degrade the groundwater. When alternative water sources are available for importation, the Plan Group considers not only the cost but also the quality, including salinity, of the water. The Plan Group will evaluate all possible alternatives, and, when practical and feasible, select water sources with acceptable levels of salinity.

7.4 - Migration of Contaminated Groundwater

Groundwater contamination can be human induced or be caused by naturally occurring processes and chemicals. Sources of groundwater contamination can include irrigation, dairies, pesticide applications, septic tanks, industrial sources, stormwater runoff, and disposal sites. Groundwater within the Plan Area is generally of excellent quality for agricultural use and migration of contaminated groundwater is not a present concern. Nevertheless, the Plan Group recognizes that migration of contaminated groundwater is always possible. The Plan Group will continue to review groundwater quality data from other sources and remain cognizant of the possibility of contaminated groundwater migration within the Plan Area.

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8 - GROUNDWATER SUSTAINABILITY

Implicit in this plan is the contention that under existing conditions, the Plan Group's groundwater-related issues can be addressed through presently available means without intrusive regulation and/or restrictions on the use of groundwater extracted for private use. To that end, no groundwater management measure undertaken as a result of this plan shall require involuntary metering or otherwise interfere with the private extraction of groundwater for non export-related uses. Rather, the Plan Group will strive to prevent groundwater overdraft through groundwater management and voluntary programs.

8.1 - Overdraft Mitigation

Groundwater overdraft is not presently a problem in the Plan Area. Groundwater overdraft was a concern in the 1940's, which was one of the reasons the three Districts sought CVP contracts for surface waters. Since then groundwater levels have gradually risen and are now fairly stable.

Distribution System Seepage

Formerly, the distribution facilities in OCID contributed about 2,600 acre-feet per year to groundwater replenishment in the form of leakage or seepage losses. However, the OCID facilities were rehabilitated in the 1990's with 110 miles of new pipelines, and, as a result, losses from the system were reduced from about 2,600 acre-feet/year to essentially zero. This has caused a reduction in groundwater replenishment. The impact of the reduced seepage cannot be accurately evaluated since only a few years of data is available, but the situation will continue to be monitored. OCID will consider videotaping their pipelines when there is reason to suspect pipeline breakages or serious degradation, subject to available District funds.

Groundwater Level Monitoring

OCID plans to expand their groundwater-level monitoring network, which will provide early warning of impending groundwater overdraft (See Section 6.1). In addition, OCID is evaluating a drought preparedness program that would provide incentives for growers to pump more groundwater in dry years to allow other growers (that do not have a sustainable groundwater supply) to use any available surface waters. The plan will include a hydrogeologic evaluation and intensive planning and monitoring to ensure that the extra pumping does not lead to long-term groundwater overdraft or damage to the aquifer.

Groundwater Safe Yield

Estimates prepared by the USBR staff, dated August 12, 1988, show safe yield in OCID to be 26,899 acre-feet per year. Other reports show the safe yield to be 27,800 acre-feet. At best, OCID's safe yield does not exceed 28,000 acre-feet.

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OCID does not measure or keep records of groundwater pumping, but it can be measured by subtracting surface water deliveries and direct precipitation from estimated crop evapotranspiration. The safe yield in HVID and TVWD are not accurately known.

Limitations on Pumping

The California Water Code gives water and irrigation districts the power to limit or suspend groundwater extractions. However, such limits will only be implemented if the Plan Group determines through study and investigation that groundwater replenishment programs or other alternative sources of water supply have proved insufficient or infeasible to lessen groundwater demand. In the unlikely event that it becomes necessary to reduce groundwater extractions, the Plan Group intends to accomplish such reductions under a voluntary program, which will include suitable incentives to compensate users for reducing their groundwater pumping. The Plan Group will not attempt to restrict or otherwise interfere with any landowner or water user exercising a valid right to pump and utilize groundwater.

Limitations on the Exportation of Water Supplies

The Plan Group has established a goal to prepare guidelines for restricting water exports from the Plan Area. The guidelines would require the Plan Group to approve any water transfer that permanently moves local water outside of the Plan Area. The goal would be to prevent a willing seller from adversely impacting others in the Plan Area.

As one of the procedures to optimize available surface water resources, the guidelines should address the coordination of supply quantities that are available for transfer. As transfers between the Plan Group have historically taken place, any similar future transfers are exempt from the provisions of the CVP Improvement Act. Consideration should be given in the guideline development process to first right of refusal procedures due to the advantages of full utilization of contract supplies, and the relationship of the groundwater reservoir available to growers located within the Plan Group.

The Plan Group's restrictions on groundwater exports will be similar to those enacted in the County of Fresno Ordinance No. 00-013 (see **Appendix B**). This ordinance regulates groundwater extractions and requires permits for transferring groundwater outside of the County. The Plan Group generally does not support groundwater pumping for export out of the Plan Area unless it involves a transfer or exchange of water that will not reduce the total water supply available to the Plan Area. In addition, the Plan Group usually opposes surface water transfers that are accompanied with increased groundwater pumping used to replace the transferred surface water. However, such transfers will be reviewed on a case-by-case basis and will be permitted if they are approved by the Board of Directors.

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Pumping Well Interference from Adjacent Properties

A significant cause of overdraft in many Districts in the San Joaquin Valley is pumping by adjacent landowners. This occurs when water users in a district pump groundwater and the extraction well's capture zone entrains groundwater from a neighboring district. This phenomenon, called pumping well interference, is not currently a problem between the Plan Group members and the neighboring Alta Irrigation District. Nevertheless, it is recognized that pumping well interference could become prevalent if groundwater conditions and pumping patterns change appreciably. Therefore, pumping well interference will be evaluated annually in the Annual Groundwater Report. If pumping well interference is impacting water levels and well yields in the Plan Area, then capture zone analysis will be used to establish the extent of the problem, and the parties involved will meet to discuss alternatives for resolving the problem.

8.2 - Groundwater Replenishment

The Plan Group does not practice intentional groundwater replenishment because of the fairly high groundwater levels and limited storage capacity in the local aquifer, fairly stable groundwater levels, and the existence of some natural and indirect forms of groundwater replenishment. In addition, the Plan Group does not anticipate a need for artificial groundwater replenishment in the near future. The natural and indirect forms of groundwater replenishment in the Plan Area are discussed below:

Deep percolation from irrigation

Deep percolation occurs when some of the water applied for irrigation percolates beyond the crop root zone and accumulates in the aquifer. The extent of deep percolation varies with the irrigation method, irrigation efficiency, and antecedent moisture condition.

Streambed Infiltration

Groundwater replenishment comes from Sand Creek, Wahtoke Creek, Wooten Creek, and, to a lesser extent, from smaller intermittent streams in the area. This source of groundwater replenishment is probably significant but has not been quantified.

Canal Seepage

Canal seepage occurs from the Friant-Kern Canal on the east side of the District and the Alta Canal on the west side of the District. A major section of the Friant-Kern Canal is unlined through OCID. Seepage from the Canal is estimated to be 5,000 acre-feet/year. Seepage from the unlined Alta Canal may impact water levels in the OCID. The groundwater generally flows from east to west, so, the Alta Canal seepage, which is on the western border of the District, would only influence water levels if the seepage caused groundwater mounding.

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Deep percolation from precipitation

While some deep percolation may result from exceptionally long and heavy storms, such storms are so infrequent that the average annual replenishment from precipitation is considered too small to directly affect the estimates of natural recharge to the groundwater.

Seepage from Distribution Facilities

Formerly, the distribution facilities in the OCID contributed about 2,600 acre-feet per year to groundwater replenishment. However, the District facilities were rehabilitated in the 1990's with 110 miles of new pipelines, and, as a result, losses from the system were reduced from about 2,600 acre-feet/year to essentially zero. This has caused a reduction in groundwater replenishment.

In-Lieu deliveries

The Plan Group views in-lieu deliveries as the most practical and effective means of groundwater replenishment. In-lieu deliveries, also called indirect deliveries, involve the delivery of surface water to landowners and water users who would otherwise have pumped groundwater, thus leaving water in the aquifer for future use.

The Plan Area has limited groundwater storage due to the tight soils, shallow alluvial cover, and the presence of some granite layers that are intact and have little to no permeability. Within the Plan Area groundwater is stored primarily in fractured and decomposed sections of the granite pediment. Consequently, there is a delicate balance between groundwater overdraft and high water levels. Therefore, care must be exercised by the land operators to maintain a balance between recharge and withdrawal from the groundwater reservoir to prevent insufficient water supply on one hand and waterlogging on the other hand. On most lands in the area the growers are solving these problems through various management practices. Groundwater levels in the Plan Area are fairly stable, but they can change considerably in different hydrologic year types.

Intentional Recharge

Although intentional recharge is not considered necessary at the time, the Plan Group has identified the following areas that may have potential, if they are needed in the future:

- 1) The areas east of Smith Mountain and around the community of Navalencia may have potential for direct and indirect (in-lieu) groundwater recharge; and
- 2) Increased groundwater recharge may be possible through existing surface features such as Sand Creek.

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8.3 - Conjunctive Use of Water Resources

Conjunctive use of water is defined as the coordinated use of both underground and surface water sources so that the combination will result in optimum benefits. The landowners will continue to have limited surface water supplies and therefore also need to rely on groundwater to meet their water demands. The Plan Group does not operate any groundwater wells or perform direct groundwater recharge. Landowners in the District practice their own conjunctive use because of necessity. Accordingly, when determined practical and appropriate, the policies below will be followed to encourage and facilitate conjunctive use of the Plan Area's water resources:

1. Encourage and assist landowners and water users in the transfer of water into the Plan Area, which will have the effect of causing additional "in lieu" recharge.
2. Pursue the acquisition of new water supplies should they become available at affordable costs.
3. Generally prohibit transfers of surface water out of the District that are replaced with groundwater pumping, unless the transfer is approved by the Board of Directors.
4. Encourage those urban water agencies that have not already done so to contract for all surface water to which they are entitled and reduce groundwater pumping.
5. Work with all appropriate public agencies, private organizations, and individuals within and outside of the Plan Area to protect existing surface water rights and supplies.
6. Seek opportunities to increase conservation storage through groundwater banking programs or off-stream storage to help balance full contract supply years with drought years.

In addition, OCID is currently studying the possibility of establishing in-lieu use agreements with growers. In-lieu use agreements would provide incentives for growers with reliable wells to use more surface water in wet years and shift to groundwater pumping in dry years. The release of those grower's surface water supplies in dry years would increase dry year surface water supplies for other growers in the Plan Area.

8.4 - Water Recycling

The Orange Cove Irrigation District formerly used about 260 acre-feet of treated water from the City of Orange Cove's Wastewater Treatment Plant. The program was suspended several years ago when the City reverted from tertiary treatment back to secondary treatment methods and OCID declined the water due to its inadequate quality. OCID will attempt to resolve these water quality issues with the City of Orange Cove and renew deliveries of treated water.

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9 - GROUNDWATER OPERATIONS

9.1 - Well Construction Policies

Proper well construction is important to ensure reliability, longevity, and protection of groundwater resources from contamination. Fresno County has adopted a well-construction permitting-program consistent with Department of Water Resources Bulletin 74-81 to assure proper construction of groundwater wells within the County. No specific requirements for well construction in Tulare County are known, but the Fresno County standards will also be used for wells constructed in Tulare County that are within the Plan Area.

Proper wellhead protection is essential to ensure that contaminants do not inadvertently enter a well. Well construction policies that are intended to ensure proper wellhead protection are discussed in Section 7.2 – Wellhead Protection.

The Plan Group does not presently operate production wells but may construct monitor wells with District funds. Important items to consider for a properly drilled monitor well include 1) method of drilling, 2) casing type and diameter, 3) perforations or well screen, 4) gravel pack, 5) annular seal, and 6) well development. As a general rule, monitor wells should be placed immediately upgradient and downgradient of a waste discharge site. An aquifer test is recommended after the monitor well is developed. Care should be taken to drill monitor wells deep enough so they won't go dry during summer months or drought periods; however, they should not be drilled so deep as to make monitoring of the shallowest strata difficult. Historical water level fluctuations should be examined to determine the magnitude of fluctuations to be expected in the future.

In addition, the following quality assurance procedures will be followed when constructing District owned wells in the Plan Area. Landowners are also encouraged to follow these procedures when constructing private wells:

1. Well construction will be performed under contract by a licensed and experienced well driller, in accordance with specifications prepared by a licensed engineer or geologist, and reviewed by legal counsel.
2. A licensed engineer or geologist will oversee construction of the wells.
3. A licensed land surveyor in the State of California will oversee survey of any newly constructed wells.
4. District legal counsel will provide needed agreement documentation for right-of-way, construction and entry permission.

9.2 - Operation of Facilities

The Districts do not own or operate any wells. However, they strive to provide the best facilities for delivery of surface water supplies, since they are used

Groundwater Management Plan
Orange Cove Irrigation District
Tri-Valley Water District
Hills Valley Irrigation District

conjunctively with groundwater. In the 1990's a significant objective was achieved with the total rehabilitation of OCID's water distribution system, which included the laying of approximately 110 miles of new pipelines, the installation of new high-efficient pumping plants, and the conversion of orifice plate deliveries to metered deliveries. The District achieved this objective in July 1997, albeit with significant cost. The rehabilitation project cut the District's average annual water loss (from seepage and leakage) from 10-14 percent to effectively zero.

**Groundwater Management Plan
Orange Cove Irrigation District
Tri-Valley Water District
Hills Valley Irrigation District**

10 - GROUNDWATER PLANNING AND MANAGEMENT

10.1 - Land Use Planning

The Plan Group does not have direct land-use planning authority. However, they do have the opportunity to comment on the environmental documents for land-use related activities, and protest when appropriate. Therefore, the Plan Group intends to participate with the City of Orange Cove, Fresno County, Tulare County, and any other appropriate agencies in reviewing and commenting on land-use plans that have the potential to affect groundwater supplies underlying the Plan Area. The Plan Group will pursue actions to minimize any adverse impact on groundwater supplies, groundwater quality, groundwater levels, groundwater recharge areas and surface water supplies as a result of any proposed land use changes.

10.2 - Groundwater Reports

The Plan Group has a goal to prepare groundwater reports every year to document groundwater levels, available groundwater storage, and historical trends. This information will be used to forecast future problems, plan future groundwater projects, and develop new groundwater policies. See Appendix C for a report outline. The groundwater reports will include the following:

- Groundwater level data;
- Groundwater contour maps;
- Groundwater storage calculations;
- Evaluation of 1-year and 5-year historical trends in groundwater levels, contours, and storage, and perceived reasons for any changes;
- Summary of important groundwater management actions during the period covered by the report;
- Discussion on whether management actions are meeting the management objectives;
- Summary of proposed management actions for the future;
- Summary of any plan component changes during the period covered by the report (i.e. new well construction, changes in wells being monitored, recharge site developments, etc.); and
- Summary of actions taken to coordinate with other water management, land-use and government agencies.

10.3 - Plan Implementation

The current implementation schedule for the GMP is as follows:

1. Implement a new expanded groundwater-level monitoring program to observe short- and long-term changes in groundwater levels and groundwater storage. (2006)

Groundwater Management Plan
Orange Cove Irrigation District
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Hills Valley Irrigation District

2. Develop an incentive based in-lieu use program that would encourage groundwater pumping in dry years to provide more surface water to growers with no groundwater supply. (2006-2007)
3. Prepare annual groundwater reports. (beginning in 2006)
4. Hold annual Groundwater Advisory Committee meetings to monitor progress and make recommendations. (beginning in 2006)
5. Renew discussions with the City of Orange Cove regarding the use of treated water for irrigation. (2006-2007)
6. Seek opportunities to form or join regional water management groups to improve regional cooperation and the sharing of ideas. (2006-2007)
7. Incorporate water level data from areas just outside of OCID, such as the Alta Irrigation District, into the OCID groundwater database. Ensure that consistent monitoring protocols are being used between the Plan Group and other agencies that are providing water level measurements for the database. (2007)

Implementation of the updated plan is expected to result in significant amounts of new knowledge and an achievable improvement in groundwater management in the basin.

10.4 - Plan Re-evaluation

Most of the strategies that make up this Plan are established policies, procedures, and ordinances. The goal of this document is to codify them for purposes of identifying an overall management program.

Implementation of the various components of the Plan will continue on an on-going basis. As new policies, practices, or ordinances become necessary or desirable to enhance the management of the Plan Area's groundwater supply, this Plan will be amended as necessary.

A Groundwater Advisory Committee (Committee) will be responsible for monitoring the progress of the GMP objectives. Refer to Section 5.3 for more information on the membership, policies, and procedures of the Committee. The Committee will attempt to meet at least once a year to review and evaluate groundwater conditions as well as evaluate the effectiveness of the GMP.

The Plan Group recognizes that implementing the GMP is in the best interest of their growers. Furthermore, the Plan Group realizes that funding from state and federal agencies for groundwater projects will be largely based on their progress in implementing the GMP. Therefore, the Plan Group will also be continuously monitoring progress on furthering the goals of the GMP.

Groundwater Management Plan
Orange Cove Irrigation District
Tri-Valley Water District
Hills Valley Irrigation District

10.5 - Dispute Resolution

If groundwater disputes occur in the Plan Area then an attempt will be made to resolve the dispute through the following process:

1. Discuss the dispute with the staff member responsible for system operations if the problem is related to operation and maintenance.
2. If the dispute cannot be resolved with the operations staff, or it concerns an issue that goes beyond operation and maintenance, then contact the District Manager to discuss the issue.
3. If the issue cannot be resolved by the District Manager, the Manager will refer the dispute to the Board of Directors with a recommended resolution, unless the issue is outside the authority of the Board.
4. The District Manager may use legal counsel or technical staff to assist in addressing the issue at hand.

10.6 - Program Funding and Fees

Included in the authority granted to local agencies under AB 3030 were the powers to limit groundwater extractions and implement water replenishment fees based upon the amount of water extracted (extraction based fees must first be approved by majority vote of impacted landowners). Inherent in these powers is the authority to implement metering of private wells. These are considered measures of last resort and the Districts will make any and all efforts to ensure the private, non-metered use of groundwater by the local growers.

However, the Plan Group has the authority to finance capital improvement projects and collect repayment charges from the benefited parties. This process would require a favorable vote from the constituency approving the repayment fees prior to implementation, and is considered a realistic alternative for large capital projects to improve groundwater facilities.

In addition, OCID has successfully acquired funding from the Department of Water Resources for projects that are consistent with the goals of Groundwater Management Plan. The Plan Group will continue to pursue available grants and low-interest loans from the Department of Water Resources as well as other state and federal agencies.

Groundwater Management Plan
Orange Cove Irrigation District
Tri-Valley Water District
Hills Valley Irrigation District

11 - REFERENCES

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2. California Regional Water Quality Control Board - Central Valley Region, *Order No. R5-2004-0008, Waste Discharge Requirements for City of Orange Cove Wastewater Treatment Facility, Fresno County*, 2004.
3. California State Senate, *Senate Bill No. 1938, Chapter 603, Groundwater Management: State Funding*, 2002.
4. County of Fresno, *Fresno County Groundwater Management Plan*, March 11, 1997.
5. Department of Water Resources, *California's Ground Water, Bulletin 118*, September 1975.
6. Department of Water Resources, *California's Ground Water, Bulletin 118 (Update 2003)*, 2003.
7. Department of Water Resources, *Ground Water Basins in California, Bulletin 118-80*, January 1980.
8. Friant Unit Contractors, *Water Needs Analysis*, March 7, 1988.
9. Orange Cove Irrigation District, Hills Valley Irrigation District and Tri-Valley Water District, *Orange Cove Groundwater Management Plan*, October 27, 1997.
10. Orange Cove Irrigation District, *Water Conservation Plan*, January 1998.
11. Provost and Pritchard Engineering Group, Inc., *AB303 Application for the Groundwater Monitoring and Drought Preparedness Program for Orange Cove Irrigation District*, January 2004.
12. Thomson West, *California Water Code, 2003 Desktop Edition, Chapter 3 – Groundwater Management Plans*, 2003.
13. United States Bureau of Reclamation, *Supplemental Irrigation Suitability Land Classification Report, Central Valley Project Friant Division, Hills Valley – Tri-Valley Area*, March 1982.

**Groundwater Management Plan
Orange Cove Irrigation District
Tri-Valley Water District
Hills Valley Irrigation District**

14. United States Department of the Interior Bureau of Reclamation Region II, *Geologic Study of the Orange Cove Irrigation District*, August 1947.
15. United States Department of the Interior Bureau of Reclamation Region II, *Water Supply Study of the Orange Cove Irrigation District, Fresno and Tulare Counties, California*, September 1947.
16. United States Department of the Interior Bureau of Reclamation Region II, *Land Use Study of the Orange Cove Irrigation District, Fresno and Tulare Counties, California*, August 1947.
17. United States Geological Survey, *Water Quality Data, San Joaquin Valley, California, April 1987 to September 1988, Open File Report 91-74*, 1991.

APPENDIX A

PUBLIC PARTICIPATION IN PLAN ADOPTION

**BEFORE THE BOARD OF DIRECTORS OF THE ORANGE COVE
IRRIGATION DISTRICT**

COUNTIES OF FRESNO AND TULARE, CALIFORNIA

For Intention to Adopt the District's
Updated Groundwater Management Plan

Resolution 2006 - 04

WHEREAS, the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Water District (the Districts) adopted a Groundwater Management Plan on October 27, 1997 that is in accordance with Assembly Bill 3030; and

WHEREAS, the California Water Code permits the adoption and implementation of Groundwater Management Plans to encourage authorized local agencies to manage groundwater resources within their service areas; and

WHEREAS, updating the Districts' Groundwater Management Plan is in furtherance of and consistent with the Districts' goals and objectives; and

WHEREAS, the State of California recently adopted Senate Bill No. 1938, which specifies new requirements for Groundwater Management Plans; and

WHEREAS, The Districts' existing plan was updated to meet the requirements of Senate Bill No. 1938; and

WHEREAS, the Districts believe that adopting a new Groundwater Management Plan will be in the best interests of the Districts' landowners and water users and can help meet the projected long-term water needs of the Districts;

WHEREAS, the Hills Valley Irrigation District and Tri-Valley Water District have granted the Orange Cove Irrigation District lead agency status for the update to the Groundwater Management Plan adopted by Orange Cove Irrigation District, Hills Valley Irrigation District and Tri-Valley Water District on October 27, 1997;

WHEREAS, a public hearing was held on June 14, 2006, to discuss the adoption and implementation of an updated Groundwater Management Plan;

WHEREAS, no written protests, as prescribed in California Water Code Section 10753.6, were filed, and as therein provided, this Board may now adopt the proposed Groundwater Management Plan.

BE IT RESOLVED, by the Board of Directors as follows:

The foregoing findings are true and correct:

1. The District approves and adopts the Groundwater Management Plan in accordance with Part 2.75 of Division 6 of the California Water Code;
2. That this resolution shall be deemed a resolution of intention in accordance with California Water Code Section 10753.2;
3. That the officers of the District are authorized and directed to publish this resolution of intention to adopt the District's Groundwater Management Plan in accordance with the provisions of California Water Code Section 10753.3 and to provide interested persons with a copy of this resolution upon written request.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Orange Cove

Irrigation District on June 14, 2006.

AYES:

NOES:

ABSENT:

ABSTAIN:

Harry A. Bailey, President, Orange Cove Irrigation District

CERTIFICATE OF SECRETARY

I hereby certify that I am the Secretary of the Orange Cove Irrigation District and that the foregoing Resolution was duly adopted by the Board of Directors of said District at the Regular Meeting duly held in Orange Cove, California on June 14, 2006, at which meeting a quorum of said Board of Directors was at all times present and acting.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of said District this 14th day of June, 2006.

John P. Roldan
John P. Roldan, Secretary
Orange Cove Irrigation District

Minutes of the Regular Meeting of the Board of Directors of the Orange Cove Irrigation District held on Wednesday, December 8, 2004. The Meeting was called to order at 8:00 A.M., with the following Directors and Officers present:

Directors: Harvey A. Bailey, President
David A. Brown
Arlen D. Miller
Russell Katayama

Officers: James C. Chandler
Engineer-Manager-Secretary
Robert T. Ramirez, Controller / Treasurer

Absent: Henry A. Collin, III, Vice President

Others: Counsel Soares by Conference Phone

President Bailey called for election of officers. Director Katayama offered a motion to keep existing officers in place. The motion was seconded by Director Miller and unanimously approved by the Board.

The meeting was recessed at 8:05 AM to conduct the Board meeting for the Orange Cove Irrigation District Financial Corporation. The Financial Corporation BOD meeting adjourned at 8:15 AM and the Board reconvened for the regular OCID Board of Directors meeting.

President Bailey asked if there were any changes to the agenda. Hearing none, he ordered the agenda approved as prepared.

President Bailey then asked if there were any errors or omissions to the minutes for the Regular Board meeting held November 10, 2004. Hearing none, Chairman Bailey ordered the minutes approved as prepared.

Bills totaling \$292,781.19 were then discussed. After discussion, Director Miller offered a motion to approve the bills. The motion was seconded by Director Katayama and unanimously approved by the Board.

The Monthly Report was then discussed. Controller Ramirez reported on the financial standing of the District and other related activities of the Accounting Department. Manager Chandler reported on various sessions held at the ACWA Conference. Various other water related issues were discussed.

A Closed Session was called at 8:40 AM to discuss pending litigation. Counsel Soares joined the meeting by conference phone. Chairman Bailey called the meeting out of Closed Session at 9:20 AM and reported that no action had been taken in Closed Session.

Under Friant Water Users Authority and Friant Water Authority, discussion focused on the litigation before Judge Karlton. Chairman Bailey reported on other issues involving the two authorities and the G-10 Group which was formed to mitigate potential adverse impacts to water users coming from Judge Karlton's ruling.

Under Electrical Power, power generation and revenue reports were given for FPA and FWR. It was also noted that FPA would hold a Board meeting December 14th. A tour would be held the afternoon of December 9th to review current maintenance work and future needs being for the plant. It was also noted that the FERC license amendment for Fishwater Hydro was ready for submittal to FERC.

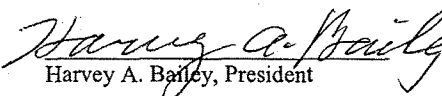
The Board recessed from its regular meeting at 9:53 AM to conduct a joint hearing with the Hills Valley ID and Tri-Valley WD Boards of Directors for the planned update of the joint groundwater management plan. The hearing adjourned at 10:35 AM and the OCID Board returned to its regular meeting.

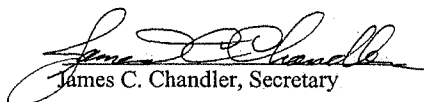
Under Groundwater Management Planning, a status report was given. The District had executed agreements with DWR for the grant and Pritchard and Provost Engineering Group to conduct the studies. P&P Engineering are moving quickly to get the studies underway.

Under Long Range Water Management Plan and consolidation of districts, the District is in the process of informational meeting which it wants to complete prior to negotiations with Hills Valley ID and Tri-Valley WD.

A discussion was then held to consider supporting the activities of the Pacific Legal Foundation and the California Farm Water Coalition. After discussion, the Board recognized the importance of both organization and offered to support one or both if staff could find items in the budget that could be cut to offset the cost.

With no further business to discuss, the Regular Board meeting was adjourned at 11:12 AM.


Harvey A. Bailey, President


James C. Chandler, Secretary

1130 "G" Street
Reedley, California 93654
Telephone: (559) 638-2244

SUPERIOR COURT OF CALIFORNIA

Public Hearings

STATE OF CALIFORNIA

County of Fresno

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the REEDLEY EXPONENT, a newspaper of general circulation, printed and published in the City of Reedley, County of Fresno, and which newspaper has been adjudged a newspaper of general circulation by the superior court of the County of Fresno, State of California, under the date of July 1, 1952, Case Number 867614; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

June 1, 8, 2006

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

on June 8, 2006

Charlene Vaughn

(Space below for use of County Clerk only)

**NOTICE OF HEARING
ON ORANGE COVE
IRRIGATION DISTRICT,
HILLS VALLEY
IRRIGATION DISTRICT,
AND TRI-VALLEY
WATER DISTRICT'S
INTENTION TO ADOPT
AN UPDATED
GROUNDWATER
MANAGEMENT PLAN**

Notice IS HEREBY GIVEN that at 12 o'clock on the 14th day of June, 2006, before the Board of Directors of the Orange Cove Irrigation District, acting on behalf of itself and the Board of Directors of the Hills Valley Irrigation District and Tri-Valley Water District, at the offices of the Orange Cove Irrigation District at 1130 Park Blvd., Orange Cove, California, a public hearing will be held to discuss whether or not the Districts should adopt a resolution to adopt an updated Groundwater Management Plan that has been modified to be in compliance with California Senate Bill No. 1938.

Senate Bill No. 1938 specifies new requirements for the purpose of qualifying as a groundwater management plan for the purpose of being eligible to receive state funds for the construction of groundwater projects or groundwater quality projects. Part 2.75 of Division 6 of the California Water Code permits the adoption and implementation of groundwater management plans to encourage authorized local agencies to manage groundwater resources within their service areas.

Landowners within the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Water District and other interested parties are invited to attend the hearing. Copies of the updated Groundwater Management Plan, proposed resolution, and other relevant written materials will be available for review by the public at the hearing or may be obtained in advance at the Orange Cove Irrigation District Office, 1130 Park Ave., Orange Cove, California, 93646. Opportunity for public questions and input will be provided at the hearing.

June 1, 8, 2006

OF FRESNO

**ARATION OF PUBLICATION
(2015.5 C.C.P.)**

JUN 15 2006
ORANGE COVE IRRIGATION DIST.

BEFORE THE BOARD OF DIRECTORS
OF THE
ORANGE COVE IRRIGATION DISTRICT
COUNTIES OF FRESNO AND TULARE, CALIFORNIA

For Information to Update the District's
Groundwater Management Plan

Resolution 2005

WHEREAS, the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri Valley Water District adopted a Groundwater Management Plan on October 27, 1997, that is in accordance with Assembly Bill 3030; and

WHEREAS, the California Water Code permits the adoption and implementation of Groundwater Management Plans to encourage authorized local agencies to manage groundwater resources within their respective areas;

WHEREAS, updating the District's Groundwater Management Plan is in furtherance of and consistent with the District's goals and objectives; and

WHEREAS, the State of California recently adopted Senate Bill No. 1938, which specifies new requirements for Groundwater Management Plans; and

WHEREAS, the District's existing plan needs to be updated to meet the requirements of Senate Bill No. 1938 and the District believes that the Groundwater Management Plan should be updated to be in compliance with California Senate Bill No. 1938; and

WHEREAS, the District believes that updating and adopting a new Groundwater Management Plan will be in the best interest of the District's landowners and water users and can help meet the projected long-term water needs of the District;

WHEREAS, the Hills Valley Irrigation District and Tri Valley Water District have granted the Orange Cove Irrigation District lead agency status for the update to the Groundwater Management Plan adopted by Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri Valley Water District on October 27, 1997; and

WHEREAS, a public hearing was held on December 2, 2004, to discuss the adoption and implementation of an updated Groundwater Management Plan;

BE IT RESOLVED, by the Board of Directors as follows:

The foregoing findings are true and correct;

1. That the intention of the District to update the Groundwater Management Plan in accordance with Senate Bill No. 1938, and to authorize its consultant to thereby authorized and directed to draft such a plan;
2. That this resolution is the declared resolution of intention in accordance with California Water Code Section 10753.3;
3. After such plan has been prepared, the District will conduct a second public hearing in accordance with the California Water Code Section 10753.3 and will determine whether to adopt the plan;
4. That the official of the District are authorized and directed to publish this resolution, to inform the District's Groundwater Management Plan in accordance with the provisions of California Water Code Section 10753.3 and to provide interested persons with a copy of this resolution upon written request;
5. That the Board hereby authorizes its officers to execute all documents and take any other action necessary or advisable to carry out the purposes of this resolution.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Orange

Cove Irrigation District on November 9, 2005.

AMES: Directors Bailey, Colin Brown, Miller, and Katayama

NOTES:

ABSENT:

ABSTAIN:

Harvey A. Bradley

President, Orange Cove Irrigation District

CERTIFICATE OF SECRETARY

I hereby certify that I am the Secretary of the Orange Cove Irrigation District and that the foregoing Resolution was duly adopted by the Board of Directors of said District at the Regular Meeting duly held in Orange Cove, California on November 9, 2005, at which meeting a quorum of said Board of Directors was at all times present and acting.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of said District this 9th day of November, 2005.

11/9/2005

9:00 AM

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1130 "G" Street
Reedley, California 93654
Telephone: (559) 638-2244

(Space below for use of County Clerk only)

JAN 13 2006

SUPERIOR COURT OF CALIFORNIA, COUNTY OF FRESNO

Public Notice

CASE NO. _____

DECLARATION OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA

County of Fresno

I, _____, a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the REEDLEY EXPONENT, a newspaper of general circulation, printed and published in the City of Reedley, County of Fresno, and which newspaper has been adjudged a newspaper of general circulation by the superior court of the County of Fresno, State of California, under the date of July 1, 1952, Case Number 867614; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

December 29, 2005

January 5, 2006

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

on January 5, 2006

Charlene Vaughn

**NOTICE OF HEARING ON
ORANGE COVE IRRIGATION
DISTRICT, HILLS VALLEY
IRRIGATION DISTRICT, AND TRI-
VALLEY WATER DISTRICT'S
INTENTION TO UPDATE THEIR
JOINT GROUNDWATER
MANAGEMENT PLAN**

NOTICE IS HEREBY GIVEN that at 10:00 a.m. on the 8th day of December, 2004, before the Board of Directors of the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Irrigation District (the Districts), at the offices of the Orange Cove Irrigation District at 1130 Park Blvd., Orange Cove, California, a public hearing will be held to discuss whether or not the Districts should adopt a resolution of intention to update the Districts' groundwater management plan to be in compliance with California Senate Bill No. 1938.

Senate Bill No. 1938 specifies new requirements for the purposes of qualifying as a groundwater management plan for the purposes of being eligible to receive state funds for the construction of groundwater projects or groundwater quality projects. Part 2.75 of Division 6 of the California Water Code permits the adoption and implementation of groundwater management plans to encourage authorized local agencies to manage groundwater resources within their service areas.

Landowners within the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Water District and other interested parties are invited to attend the hearing. Copies of the proposed resolution and other relevant written materials will be available for review by the public at the hearing or may be obtained in advance at the Orange Cove Irrigation District Office, 1130 Park Blvd., Orange Cove, California, 93646. Opportunity for public questions and input will be provided at the hearing.

In compliance with Water Code § 10753.4(b), landowners and other interested parties who wish to participate in updating the groundwater management plan, including becoming a member of a technical advisory committee, may do so by attending the hearing and indicating their interest or by submitting a written letter to James Chandler, District Manager, Orange Cove Irrigation District, 1130 Park Blvd., Orange Cove, California, 93646.

Nov. 24, Dec. 1, 2004

Minutes of the Hearing and joint meeting of the Boards of Directors of the Orange Cove Irrigation District, Hills Valley Irrigation District and Tri-Valley Water District held on Wednesday, December 8, 2004. The Hearing was publicly noticed to seek public input from persons interested in the groundwater planning efforts of the three districts. The Hearing was called to order at 10:00 A.M., with the following Directors and Officers present:

Orange Cove Irrigation District

Directors: Harvey A. Bailey, President
David A. Brown
Arlen D. Miller
Russell Katayama

Officers: James C. Chandler
Engineer-Manager-Secretary
Robert T. Ramirez, Controller / Treasurer

Absent: Henry A. Collin, III, Vice President

Hills valley Irrigation District

Directors: Don Schroeder, President
Alan Corrin
Loren Booth

Officers: Dennis Keller, Manager-Engineer-Secretary-Treasurer

Tri-Valley Water District

Directors: None present

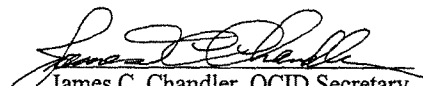
Officers: Dennis Keller, Consulting Engineer

OCID Manager Chandler reported that OCID had received a grant from California Department of Water Resources to update the joint AB3030 Groundwater Management Plan to the current SB1938 standard. In addition, OCID would be developing a Drought Preparedness Plan that would be heavily reliant on an in lieu groundwater banking program. Additional monitoring wells would be added to the District's existing monitoring well program for collection of more data for better assessments of the programs effectiveness.

An advisory committee has been established to help with the plan development and development of an incentive based program for the in lieu banking program. The committee currently consists of six landowners in OCID that farm in areas with groundwater and Manager Chandler. Dennis Keller will represent Hills Valley ID and Tri-Valley WD on the committee. Other members may be added if needed. If the initial program development is successful, it will open opportunities for additional funding to implement the full program with the long-range goal of better serving the water user with a more reliable dry year water supply with less dependence on water purchases from the open market.

OCID requested confirmation that both Hills Valley ID and Tri-Valley WD wanted to continue as joint participants in the groundwater management planning effort. Hills Valley ID voted unanimously to continue its participation. Mr. Keller will ask the same of Tri-Valley WD at their next regular board of directors meeting.

No one from the general public appeared for the Hearing. With no further business to discuss, the Hearing was adjourned at 10:35 AM.


James C. Chandler, OCID Secretary

**BEFORE THE BOARD OF DIRECTORS
OF THE
ORANGE COVE IRRIGATION DISTRICT**

COUNTIES OF FRESNO AND TULARE, CALIFORNIA

For Intention to Update the District's
Groundwater Management Plan

Resolution 2005 - 14

WHEREAS, the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Water District adopted a Groundwater Management Plan on October 27, 1997, that is in accordance with Assembly Bill 3030; and

WHEREAS, the California Water Code permits the adoption and implementation of Groundwater Management Plans to encourage authorized local agencies to manage groundwater resources within their service areas; and

WHEREAS, updating the District's Groundwater Management Plan is in furtherance of and consistent with the District's goals and objectives; and

WHEREAS, the State of California recently adopted Senate Bill No. 1938, which specifies new requirements for Groundwater Management Plans; and

WHEREAS, The District's existing plan needs to be updated to meet the requirements of Senate Bill No. 1938 and the District believes that the Groundwater Management Plan should be updated to be in compliance with California Senate Bill No. 1938; and

WHEREAS, the District believes that updating and adopting a new Groundwater Management Plan will be in the best interest of the District's landowners and water users and can help meet the projected long-term water needs of the District;

WHEREAS, the Hills Valley Irrigation District and Tri-Valley Water District have granted the Orange Cove Irrigation District lead agency status for the update to the Groundwater Management Plan adopted by Orange Cove Irrigation District, Hills Valley Irrigation District and Tri-Valley Water District on October 27, 1997; and

WHEREAS, a public hearing was held on December 8, 2004, to discuss the adoption and implementation of an updated Groundwater Management Plan;

BE IT RESOLVED, by the Board of Directors as follows:

The foregoing findings are true and correct:

1. It is the intention of the District to update the Groundwater Management Plan in accordance with Senate Bill No. 1938, and the District's consultant is hereby authorized and directed to draft such a plan;
2. That this resolution shall be deemed a resolution of intention in accordance with California Water Code Section 10753.2;
3. After such a plan has been prepared, the District will conduct a second public hearing in accordance with the California Water Code Section 10753.5, et seq. to determine whether to adopt the plan;
4. That the officers of the District are authorized and directed to publish this resolution of intention to update the District's Groundwater Management Plan in accordance with the provisions of California Water Code Section 10753.3 and to provide interested persons with a copy of this resolution upon written request;
5. That the Board hereby authorizes its officers to execute all documents and take any other action necessary or advisable to carry out the purposes of this resolution.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Orange Cove Irrigation District on November 9, 2005.

AYES: Directors Bailey, Collin, Brown, Miller and Katayama

NOES:

ABSENT:

ABSTAIN:

Harvey A. Bailey, President, Orange Cove Irrigation District

CERTIFICATE OF SECRETARY

I hereby certify that I am the Secretary of the Orange Cove Irrigation District and that the foregoing Resolution was duly adopted by the Board of Directors of said District at the Regular Meeting duly held in Orange Cove, California on November 9, 2005, at which meeting a quorum of said Board of Directors was at all times present and acting.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of said District this 9th day of November, 2005.

John P. Roldan
John P. Roldan, Secretary
Orange Cove Irrigation District

INVOICE

MID VALLEY PUBLISHING, INC.

The Reedley Exponent * The Sanger Herald * Parlier Post
Orange Cove and Mt. Times * The Fowler Ensign

1130 G STREET * P.O. BOX 432 * (559)638-2244
REEDLEY, CA 93654

INVOICE NUMBER: 0212961-IN

INVOICE DATE: 11/30/04

SALESPERSON: Janie Lucio

RECEIVED
DEC - 7 2004

Orange Cove Irrigation
P O Box 308
Orange Cove, CA 93646

CUSTOMER NO: 0212961-01
ORANGE COVE IRRIGATION DIST.

DESCRIPTION	SIZE	QUANTITY	PRICE	AMOUNT
11/24/04 - Public Notice		9.000	6.550	58.95

All services are net 15 days from date of invoice. Customer agrees to pay 18 percent per annum (minimum finance charges of \$1) or the maximum rate allowable by law, whichever is less, on the declining balance of any past due invoice. The payment or accrual of interest does not extend terms or defer payment of any past due bill, and the customer is subject to collection and/or legal action if any sum is not paid on or before the subject due date thereof.

NET INVOICE: 58.95
FREIGHT: 0.00
SALES TAX: 0.00

INVOICE TOTAL: 58.95



WATER & WASTEWATER
MUNICIPAL INFRASTRUCTURE
LAND DEVELOPMENT
AGRICULTURAL SERVICES
DAIRY SERVICES
LAND SURVEYING & GIS
PLANNING & ENVIRONMENTAL
DISTRICT MANAGEMENT

FRESNO • VISALIA • BAKERSFIELD

286 W. Cromwell Avenue
Fresno, CA 93711-6162
559 449-2700
FAX 559 449-2715

March 28, 2006

Bill Little, City Administrator
City of Orange Cove
633 Sixth Street
Orange Cove, California 93646

**Subject: Draft-Final Groundwater Management Plan
Orange Cove Irrigation District**

Dear Mr. Little:

On behalf of the Orange Cove Irrigation District, enclosed for your use is one copy of the Draft-Final Groundwater Management Plan (GMP) for the Orange Cove Irrigation District, Hills Valley Irrigation District, and Tri-Valley Water District. The Orange Cove Irrigation District understands the importance of interagency management of groundwater and would appreciate your comments and thoughts on the GMP and local groundwater management.

Please provide any comments by Monday, April 17, 2006. If you have any questions then please feel free to contact myself at 559-449-2700, or John Roldan, Manager of the Orange Cove Irrigation District, at 559-626-4461.

Thank you very much for your time.

Very truly yours,

Owen Kubit, PE

Enclosure: As noted

APPENDIX B

FRESNO COUNTY GROUNDWATER ORDINANCE REGULATING GROUNDWATER EXPORTS

AN ORDINANCE OF THE BOARD OF SUPERVISORS
OF THE COUNTY OF FRESNO ADDING TITLE 14, CHAPTER 03 TO
THE FRESNO COUNTY ORDINANCE CODE REGULATING THE EXTRACTION
AND TRANSFER OF GROUNDWATER FROM THE COUNTY OF FRESNO

The Board of Supervisors of the County of Fresno, State of California,
ORDAINS AS FOLLOWS:

Title 14. Chapter 03 "Groundwater Management" is hereby added to the
Fresno County Ordinance Code to read as follows:

CHAPTER 14.03. GROUNDWATER MANAGEMENT

Section 14.03.01. Declarations, Findings and Purpose.

(a) The protection of the health, welfare, and safety of the residents of the County, and the public benefit of the State, require that the groundwater resources of Fresno County be protected from harm resulting from the extraction and transfer of groundwater for use on lands outside the County, and from the harm resulting from the extraction of groundwater for use on lands within the County to substitute for the consequential transfer of surface water outside of the County, until such time as needed additional surface water supplies are obtained for use on lands of the County, or overdrafting is alleviated.

(b) Fresno County leads the nation in agricultural production. Groundwater, in conjunction with local and imported surface water, is an essential resource for continued agricultural production within the County, which production includes field crops, nut and fruit crops, vegetable crops, seed crops, livestock, and other products.

(c) Nearly all of the municipal and industrial water supply needs within Fresno County are met by the use of native or artificially recharged groundwater.

(d) Nearly all of the residential water supply needs within Fresno County are met by the use of native or artificially recharged groundwater.

- (e) A large area of Fresno County is subject to conditions of critical groundwater overdraft.
- (f) Areas of Fresno County are subject to limited groundwater availability.
- (g) Areas of Fresno County are underlain by groundwater that has been contaminated or is of inferior quality.
- (h) Areas of Fresno County are subject to land subsidence due to the extraction of groundwater.
- (i) Fresno County does not generally enjoy a surplus of native and recharged groundwater available for transfer outside of the County.
- (j) The long-established policy of the State of California and Fresno County favors groundwater management at the local level.
- (k) Six groundwater basins (or portions thereof) as defined by the California Department of Water Resources' Bulletin 118-30 underlie Fresno County, and most of these basins are hydraulically connected.
- (l) Fresno County is the only local agency overlying all of the groundwater basins within the County.
- (m) The long term direct or indirect transfer of groundwater from Fresno County could have significant environmental impacts on Fresno County, including but not limited to increased groundwater overdraft; land subsidence; uncontrolled movement of contaminated groundwater; uncontrolled movement of inferior quality groundwater; the lowering of groundwater levels; increased groundwater degradation; and loss of aquifer capacity due to land subsidence.
- (n) The long term direct or indirect transfer of groundwater from Fresno County could have significant economic impacts on Fresno County, including but not limited to loss of arable agricultural land; increased pumping costs due to lowered groundwater levels; increased groundwater quality treatment costs due to movement

of contaminated or inferior quality groundwater; replacement of wells due to declining groundwater levels; and replacement of damaged wells, conveyance facilities, roads, bridges and other structures due to land subsidence.

(o) Protection of the County's groundwater resources and the environment requires that the County adopt a permit process addressing the extraction of groundwater for long term use outside of the County or the long term extraction of groundwater to substitute for surface water transferred outside of the County.

(p) In adopting and codifying this groundwater management ordinance, the County does not intend to limit other authorized means of managing, protecting and conserving Fresno County groundwater, and intends to work cooperatively with local water agencies to continue their existing groundwater management practices as well as to implement joint groundwater management practices under the Groundwater Management Act and other applicable statutes, consistent with the plan goals of the Fresno County Groundwater Management Plan.

(q) Water Code section 1810(d) provides, in part, that a water conveyance facility cannot be used to transfer water if the transfer will unreasonably affect the overall economy or the environment of the county from which the water is being transferred. The Board of Supervisors of Fresno County determines that the County is qualified to make this determination. In adopting this ordinance, the County determines, to the extent such authority is granted to the County by section 1810(d), that transfers of water will or will not unreasonably affect the County's economy or environment.

(r) To ensure the continued vitality of the County's agriculture industry, the economy as a whole, and the general welfare of the citizens of the County, the County of Fresno is dedicated to proactively assist local water agencies in obtaining and maintaining adequate water supplies now and in the future.

(s) The conjunctive use of surface water supplies and groundwater for the purpose of crop production has been a historic practice in Fresno County; and applied surface water in excess of that consumed in the process of crop production has historically formed a source of groundwater recharge within Fresno County.

(t) Surface water supplies obtained in the future may be used conjunctively with groundwater. Surface water could be diverted in times of relatively high flows and groundwater could be used during periods when sufficient surface water is not available. To achieve this result, the most readily and economically available asset the County has in dealing with its water needs is its groundwater. Loss of the use of the groundwater would result in additional surface water needs. Groundwater resources must be protected so that groundwater supplies and aquifer capacity will be available for future conjunctive use.

(u) This Chapter establishes an effective County policy concerning the long term sale or other transfers of groundwater, including that extracted to substitute for surface water transfers, to protect the overall economy and environment of Fresno County. However, the County recognizes and supports the longstanding water management and water conservation efforts of local water agencies and their customers. The County does not intend that this Chapter interfere with or regulate the local water management practices of those local water agencies which are conducted during the course of their operations and that do not have long term negative impacts on the County's groundwater supply.

(v) This Chapter protects the County's important groundwater resources by requiring a permit from the County to extract on, a long term basis, groundwater for transfer outside the County, including groundwater extracted to replace a surface water supply that has been, is being, or will be transferred for long term use outside of Fresno County. This Chapter is limited to requiring a permit for the long term direct or

indirect transfer of groundwater outside the County and is not intended to regulate groundwater in any other way.

Section 14.03.02. Definitions.

(a) "Aquifer" means a geologic formation that stores, transmits and yields significant quantities of water to wells and springs.

(b) "Board" means the Board of Supervisors of Fresno County.

(c) "Carry over water" means water which has been made available to a local water agency under its contract to receive water from the U.S. Bureau of Reclamation, but was not used within the water year in which it was made available to the local water agency.

(d) "Conjunctive use" means the planned joint use of surface and groundwater. Conjunctive use anticipates that by using surplus surface water to recharge the aquifer and conserve groundwater supplies, that surplus water will then be available for future pumping when surface supplies are not adequate to meet then-current demands.

(e) "County" means the County of Fresno.

(f) "Department" means the Department of Planning and Resource Management.

(g) "Director" means the Director of the Department of Planning and Resource Management or his or her designee.

(h) "Emergency" means an unexpected occurrence demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property or essential public services. Emergency includes such occurrences as fire, flood, storm, drought, plant infestation, and earthquake or other soil or geologic movement.

(i) "Groundwater" means all water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but

does not include water that flows in known and definite channels over which the State Water Resources Control Board exercises authority.

(j) "Groundwater Banking" means the direct or in lieu recharge of local or imported water for purposes of later extraction and transfer out of Fresno County.

(k) "Groundwater Management Act" means Water Code § 10750 et seq.

(l) "Historical movement of water" means the redistribution of water undertaken in a manner, and in amounts similar to, that which has occurred in at least two (2) of the past twenty (20) years immediately preceding the effective date of this ordinance.

(m) "Imported water" means any water originating outside the County which, in the absence of actions by the importing party, would not have been available or placed to beneficial use in the County.

(n) "In lieu recharge" means the intentional delivery and use of surface water as a substitute for pumping groundwater.

(o) "Indirect transfer" of groundwater means the extraction of groundwater to replace a surface water supply that has been, is being, or will be transferred for use outside of Fresno County.

(p) "Local water agency" means any local public agency, mutual water company, or non-profit tax-exempt unincorporated association within, or partially within, Fresno County that has authority to undertake water-related activities.

(q) "Long term" means a time period of more than two (2) years.

(r) "Long term transfer" means a change in the place of use of water from within the County to lands outside of the County pursuant to a contract or a series of inter-related or inter-dependent contracts that requires a cumulative commitment in excess of two (2) years.

(s) "Overdraft" means the withdrawal of water from an aquifer in excess of the amount of water that recharges the basin over a period of years during which water supply conditions approximate average, and which, if continued over time, could eventually cause the underground supply to be exhausted, cause subsidence, cause the water table to drop below economically feasible pumping lifts, cause a detrimental change in water quality, or produce other adverse environmental impacts.

(t) "Recharge" means flows to groundwater storage from precipitation, irrigation, infiltration from streams, spreading basins, and other sources of water.

(u) "Short-term water transfer" means changing the place of water use from within the County to lands outside the County for a period of two (2) years or less.

(v) "Subsidence" means lowering or sinking of the land surface as a result of the extraction of groundwater.

(w) "Transfer" means changing the place of groundwater use from within the County to lands outside the County, either by direct transfers or indirect transfer as specifically defined in subdivision (o) above.

(x) "Water exchange" means the contractual transfer for use outside of the County of water, either groundwater or surface water to be temporarily replaced with groundwater, coupled with measures that ensure the replacement within the County of the transferred water.

(y) "Water table" means the surface or level where groundwater is encountered in an unconfined aquifer.

Section 14.03.03. Permit Required for Transfer for Use Outside County. It shall be unlawful to extract groundwater underlying lands in Fresno County, for transfer directly or indirectly, outside the County, unless exempted by this ordinance, without first obtaining a permit as provided herein.

Section 14.03.04. Administrative Structure. Applications for permits shall be filed with the Director of the Department of Planning and Resource Management. Said applications shall be reviewed by the Director or designated appointee.

Section 14.03.05. Exemptions. Permit requirements of this Chapter shall not apply to the following types of groundwater-related activities:

- A. The historical movement of water within a single local water agency's boundaries or service areas, or private property boundaries within and contiguous to Fresno County, for water management purposes and to benefit said lands;
- B. Water exchanges;
- C. Short-term water transfers;
- D. Groundwater Banking programs undertaken by local water agencies in which the banked water originates within a watershed that lies wholly or partially within Fresno County, or is carry over water, where later extraction and transfer of the banked water does not exceed the initially banked amount of water less reasonably anticipated losses.

The County may require local water agencies claiming to be engaged in exempted water banking activities to provide periodic written reports, including supporting data, to confirm their exemption;

- E. Groundwater extraction and transfer by a local water agency that has executed a memorandum of understanding or other agreement with the County that references this subsection and that allows the County to make the same six findings stated in Section 14.03.08, subdivision (a), of no significant detrimental impacts on the groundwater resources of Fresno County; and

- F. Direct or indirect transfer of groundwater as the result of an emergency as defined in Section 14.03.02, subdivision (h).

Section 14.03.06. Application for a Permit. An application for a permit shall be filed with the Director and shall contain all information required by the Department. The applicant shall provide within the timeframe required by law, where applicable, at applicant's cost, such appropriate environmental documentation as may be required by the California Environmental Quality Act ("CEQA", Public Resources Code § 21000 et seq.) and Fresno County Guidelines. The applicant shall pay all County costs related to the processing of the permit application, as reasonably determined by the County pursuant to the Department of Planning and Resource Management's routine permit fee assessment process. If the applicant is a local water agency subject to CEQA, the County shall coordinate its CEQA activities relative to the application with those of the applicant so as to minimize CEQA-related costs and duplication of efforts, subject to the County's CEQA obligations.

Section 14.03.07. Procedures for Processing.

(a) Within fifteen (15) calendar days of filing of the permit application and the deposit of required fees, and determination by the Director that the application is complete, the Director shall post a notice on the Board of Supervisors public bulletin board that an application has been filed. The Director shall send a copy of the notice and the application to: (1) all owners of real property as shown on the latest equalized assessment roll within one (1) mile of the location of the proposed extraction; (2) all local water agencies and other water agencies which own or include lands overlying or immediately adjacent to the location of the proposed extraction; and (3) to any party who has made written request to the Director for such notice within the last twelve (12) calendar months. Said notice shall provide recipients the opportunity to submit written comments on the application within fifteen (15) calendar days of mailing of the notice.

(b) As determined by the judgment of the Director, the Director shall review the application with potentially affected County departments, with the staff of applicable state and federal agencies, with local water agencies, and with any potentially affected party. In reviewing the application the Director shall consider any relevant groundwater management plan which has been adopted pursuant to the Groundwater Management Act or any other relevant information provided by the applicant.

(c) Any person or agency may provide written comments relevant to the long term extraction and transfer of groundwater. Written comments shall be submitted to the Director within fifteen (15) calendar days of the date of mailing the notice of filing of the permit application to the address specified in the notice.

(d) Upon completion of the environmental review and permit application review process, the Director shall determine whether the application meets the requirements of this Chapter, and if it does, the Director shall approve the application.

(e) Notice of the Director's decision shall be mailed within fifteen (15) calendar days of final action to the person or entity who has applied for the permit, and all other persons or entities referred to in subdivision (a) of this section.

Section 14.03.08. Findings Required for Permit Approval or Denial by the Director.

(a) The permit shall be approved only if the Director finds that the proposed long term groundwater extraction and transfer will not have significant detrimental impacts on the groundwater resources of Fresno County by determining that:

- (1) The long term extraction and transfer will not cause or increase an overdraft of the groundwater underlying the County;
- (2) The long term extraction and transfer will not adversely affect the long term storage or transmission of groundwater within any aquifer(s) underlying Fresno County;

- (3) The long term extraction and transfer will not injure the reasonable and beneficial uses of groundwater by other overlying groundwater users within Fresno County;
- (4) The long term extraction and transfer will not result in, expand, or significantly exacerbate groundwater degradation;
- (5) The long term extraction and transfer will not result in injury to a water replenishment, storage, restoration, or conveyance project; and
- (6) The long term extraction and transfer will not unreasonably affect the overall economy or environment of the County.

(b) The basis for any denial shall be reflected in the Director's official record of proceedings.

Section 14.03.09. Conditions of Permit Approval. If the permit is approved, the Director shall impose the following conditions of permit issuance on the permittee, if the permittee has not already so provided, to prohibit overdraft or other adverse conditions:

- (a) Adopt a groundwater management plan, where applicable, pursuant to the Groundwater Management Act that is consistent with the County's groundwater management plan.
- (b) Institute, where applicable, a groundwater monitoring and mitigation program associated with permittee's extraction of water that is consistent with the County's groundwater management plan.
- (c) If requested by the County, the permittee shall share with the County groundwater monitoring information and data, and, where practicable, the parties shall coordinate their groundwater management efforts to effectively monitor groundwater resources throughout the County.

(d) Comply with additional conditions for permit issuance as the Director finds necessary to promote or maintain the health, safety and welfare of Fresno County residents.

Section 14.03.10. Reapplication After Director Denial. Reapplication for a permit that has been denied by the Director will not be accepted as complete unless it includes materially different terms, or is accompanied by information that demonstrates a significant change in circumstances, from those which caused denial of the previous permit application.

Section 14.03.11. Appeal of Director Action.

(a) The applicant or any property owner or local water agency, as described in Section 14.03.07, subdivision (a), subsections (1) and (2), who can demonstrate that its water supply or property interest could be directly and adversely affected by the Director's decision, may appeal a decision of the Director by filing a written request with the Clerk of the Board within fifteen (15) calendar days of receipt of the decision of the Director. Any such appeal shall specifically set forth the procedural and substantive reasons for the appeal. The Clerk shall set a Board hearing date within ten (10) calendar days of receipt of a complete request for appeal which shall be heard within not less than ten (10) calendar nor more than twenty (20) calendar days of that notice. Written notice of the appeal shall be given to the Director, the appellant, and all other persons or entities referred to in Section 14.03.07, subdivision (a).

(b) The Board shall hear the appeal de novo (i.e., anew, over again), except where the appeal is confined to a condition imposed by the Director in which event the hearing and the decision of the Board shall relate only to such condition. The appeal before the Board shall not be conducted with formal rules of evidence, but rather shall be conducted under such rules as set by the Board for the expeditious presentation of the matter and relevant information by the appellant and by other parties interested in

the Director's decision. At its discretion, the Board may impose conditions for approval as it finds necessary to protect the interests of the County and its citizens. The decision of the Board shall be final.

(c) In any appeal taken under this section, the appellant shall have the burden of proof before the Board.

Section 14.03.12. Duration of Permit. Approved permits shall be valid for a term, as determined by the Director, not to exceed ten (10) years from the date of issuance of the permit. Long term permits of a duration beyond ten (10) years may be approved by the Director upon an applicant's proof that the nature of the applicant's project or financing justifies such an extended duration. As a condition of approval of a long term permit the applicant shall be required to provide the County with periodic reports (as specified in the permit) which include, but are not limited to, groundwater monitoring data and a detailed explanation of any proposed material changes in the project which may impact County groundwater supplies.

Section 14.03.13. Review of Permit. The permit granted pursuant to this Chapter shall be subject to periodic staff review, performed in consultation with the permittee. In the event the Department of Planning and Resource Management determines that a material violation of the conditions of the permit has occurred, the permittee shall forthwith bring itself into compliance. A determination of violation shall be in writing and include specific findings in support of the decision. A determination of violation may be appealed to the Board of Supervisors by the permittee using the appeal process as described in Section 14.03.11.

Section 14.03.14. Inspection. After providing written notice to the permittee the Director, or designee, with good cause may at any reasonable time enter any and all places, property, enclosures and structures, for the purpose of making examinations

and investigations to determine whether any provision of this Chapter or an approved permit is being violated.

Section 14.03.15. Limitation of Permit. The permit process of this Chapter is not to be construed as a grant of any right or entitlement, but rather, as evidence that the health, welfare, and safety of the residents of the County will not be harmed by the extraction and direct or indirect transfer of groundwater outside of the County. The permit does not exempt, supersede, or replace any other provisions of federal or state laws or regulations.

Section 14.03.16. Notice of Violation. Upon receiving knowledge of an alleged violation of the Ordinance, the County will provide written notice of the alleged violation to the violating party. The notice shall detail the alleged violation and require the violating party to cease and desist immediately upon receipt of said notice from the alleged violating activities or within five (5) working days prove to the County, by meeting with the Director or designated appointee, that the alleged violating activities, in fact, do not violate the Ordinance, or that there are mitigating reasons surrounding the alleged violating activities. No civil fines, as set forth in Section 14.03.17, shall accrue during this notice process. The notice shall also include details of the potential penalties for violations of the Ordinance.

Section 14.03.17. Penalty for Violation. If, within five (5) working days after receipt of a notice issued in accordance with Section 14.03.16, the violating party has not complied with Section 14.03.16, the County may elect to proceed with any or all of the following remedies for violation of this Chapter:

- (a) A civil action against the violator, including injunctive relief.
- (b) A civil action against the violator, including a fine up to \$5,000.00 for each separate violation. A person or entity shall be deemed to have committed a separate violation for each and every day or portion thereof during which any such

violation is committed, continued, or permitted as well as for each and every separate groundwater well within which any such violations are committed, continued or permitted.

Section 14.03.18. Severability. If any section, subdivision, subsection, sentence, clause or phrase of this Chapter is for any reason held illegal, invalid or unconstitutional by the final decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof. The Board hereby declares that it would have passed this Chapter and each section, subdivision, subsection, sentence, clause or phrase hereof, irrespective of the fact that any one or more sections, subdivision, subsections, sentences, clauses, or phrases be declared illegal, invalid, or unconstitutional.

Section 14.03.19. Effective Date. The provisions of this Ordinance shall be effective as to the unincorporated territory of the County thirty (30) calendar days after passage. However, implementation of the provisions of this ordinance shall be effective when the amendment to the Development Services Fee Schedule shall become effective. The provisions of the Ordinance shall become effective in the incorporated territory of the municipalities within the County of Fresno upon adoption by each municipality of an ordinance which makes the provisions of this Ordinance applicable thereto or which independently establishes an ordinance incorporating compatible provisions.

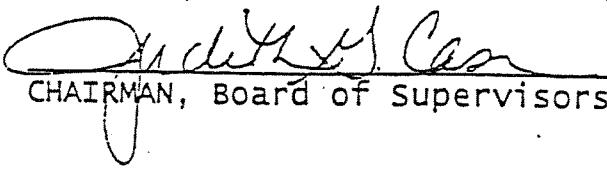
Section 14.03.20 Review. Ten (10) years from the date that this Ordinance is enacted, and at such earlier time(s) as the Board shall determine to be appropriate, the Board shall review the effectiveness of this Ordinance in protecting the County's groundwater relative to the preservation of a natural resource, the environment, and the economy and relative to impacts on the operations of local water agencies and property owners.

1 THE FOREGOING was passed and adopted by the following
2 vote of the Board of Supervisors of the County of Fresno this
3 19th day of September, 2000, to-wit:

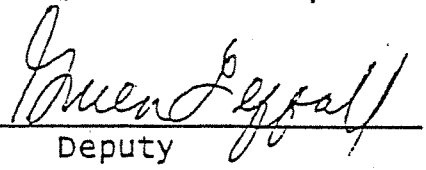
4 AYES: Supervisors Koligian, Arambula, Levy, Oken, Case

5 NOES: None

6 ABSENT: None

7
8 
CHAIRMAN, Board of Supervisors

9 ATTEST:
10 SHARI GREENWOOD
Clerk, Board of Supervisors

11
12 By 
13 Deputy
14
15
16
17
18
19
20
21
22
23

24 File #16162

25 Agenda #15

26 Ordinance #00-013
27
28

APPENDIX C

ANNUAL GROUNDWATER REPORT OUTLINE

ORANGE COVE IRRIGATION DISTRICT
2005 ANNUAL GROUNDWATER REPORT



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